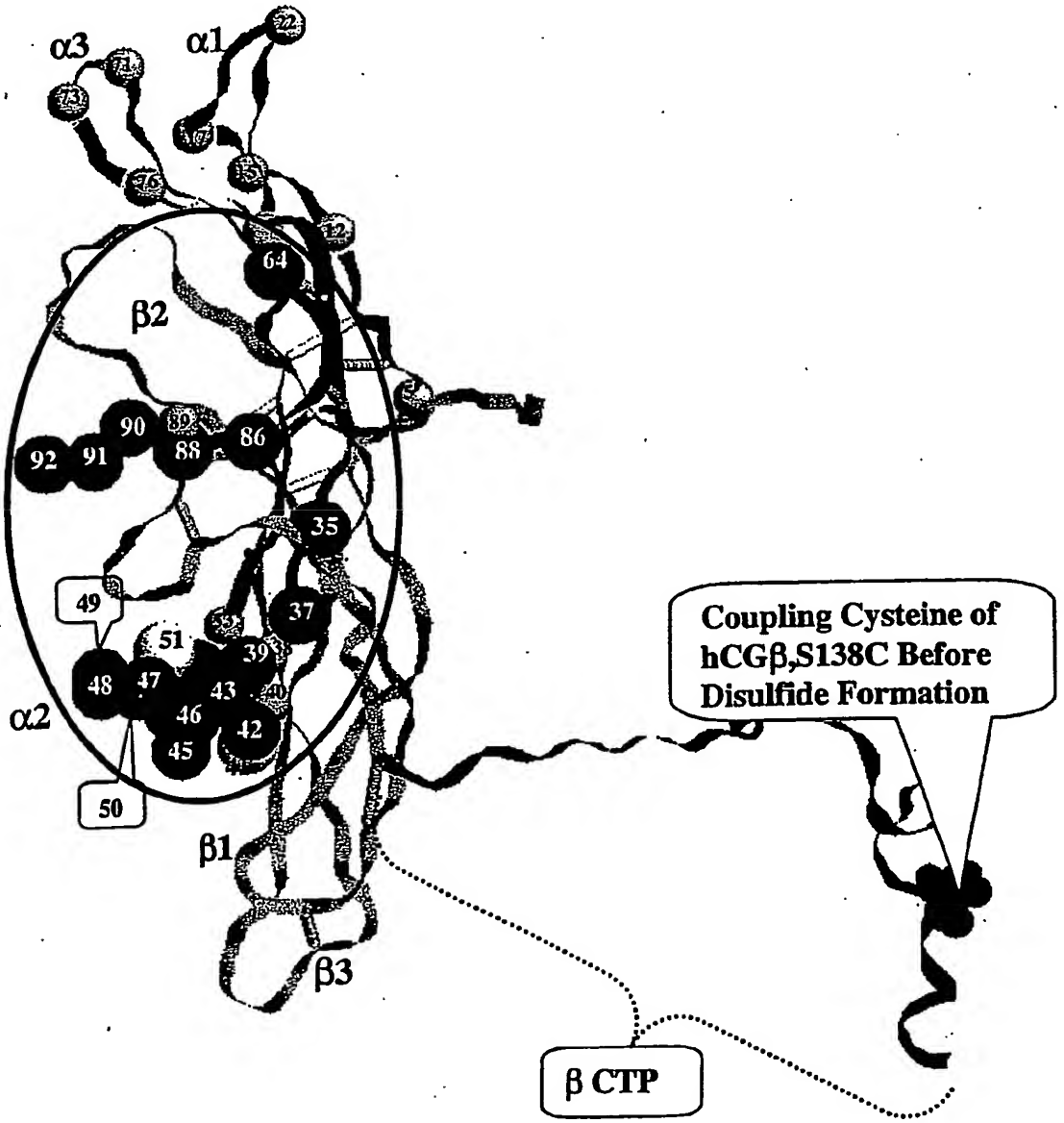
Figure 1. Illustration of the α subunit residues that can be scanned by the β-subunit carboxyterminus. The α- and β-subunit backbones are shown in dark and light gray ribbons, respectively. The β tail is shown as a black ribbon. The locations of the C_α carbons of cysteine substitutions that enabled efficient crosslink between the α subunit residue and the probe cysteine are shown as dark spheres. The lighter gray spheres refer to residues that gave less amounts of crosslink. The small pale spheres refer to cysteine substitutions that led to negligible amount of crosslink. Note that α-subunit residues 90, 91, and 92 appear to be too mobile to be seen in the crystal structure of hCG and the arbitrary positions of these residues shown here are intended only to emphasize their apparent abilities to be latched to the seatbelt.



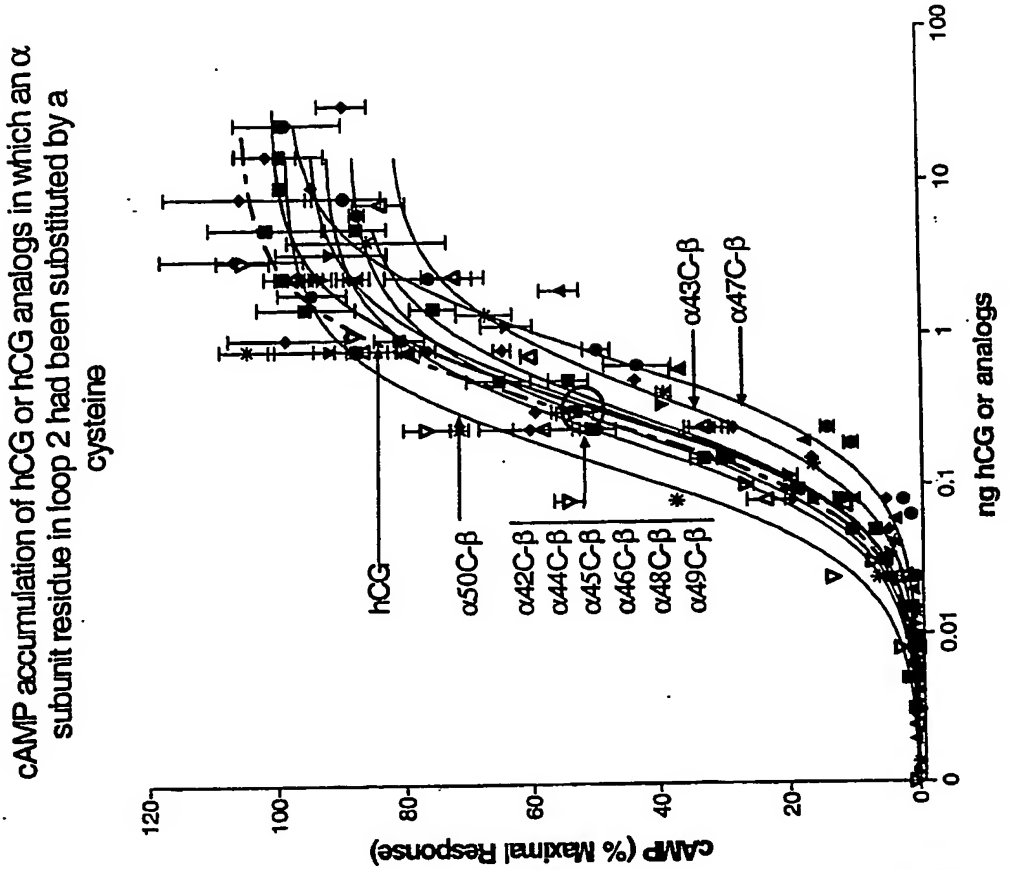


FIGURE 2B

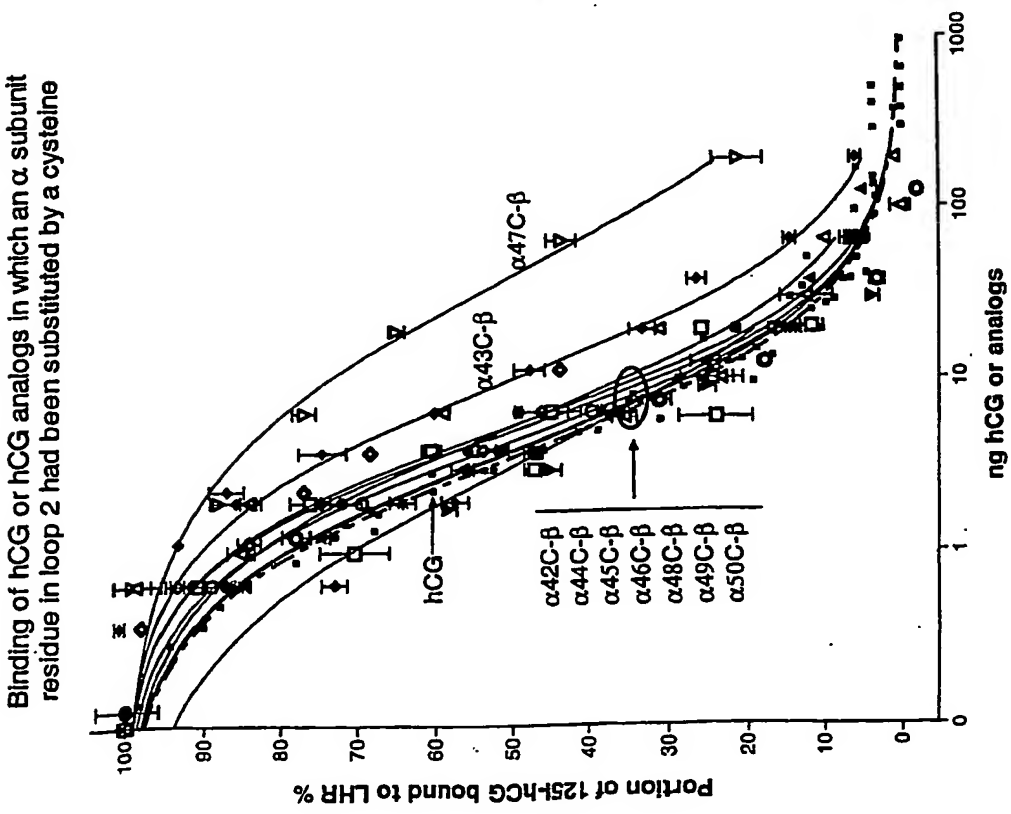


FIGURE 2A

FIGURE 2

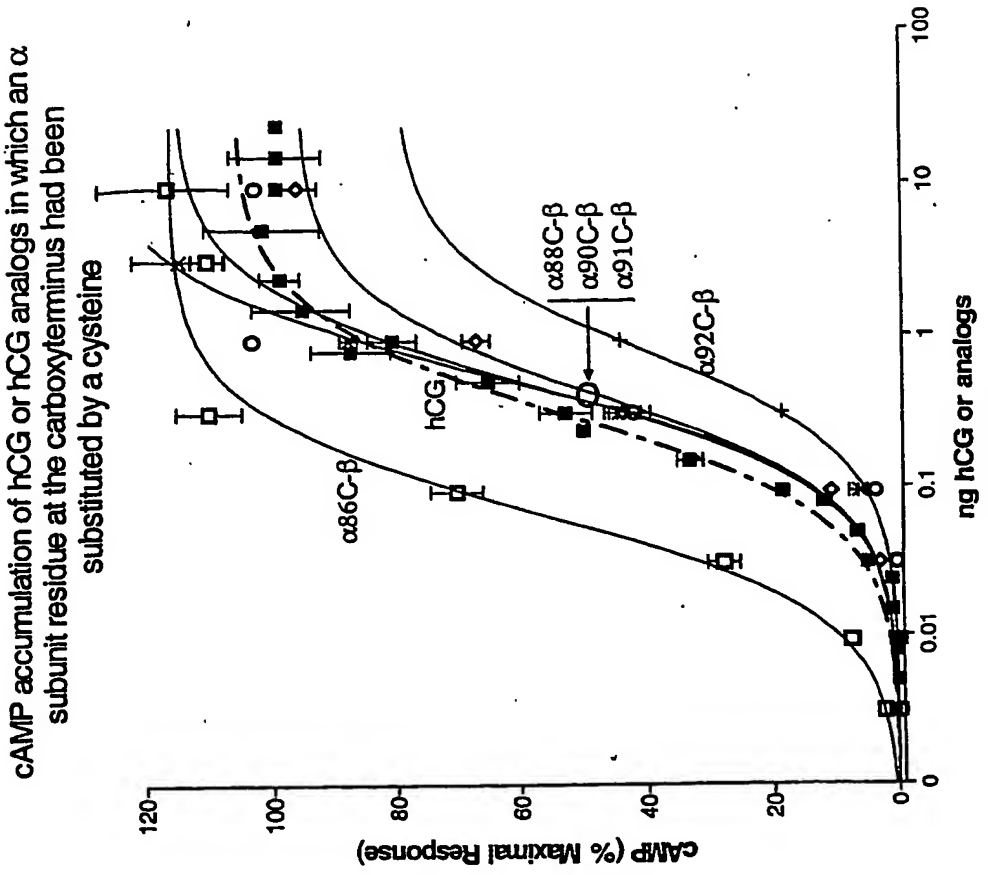


FIGURE 3B

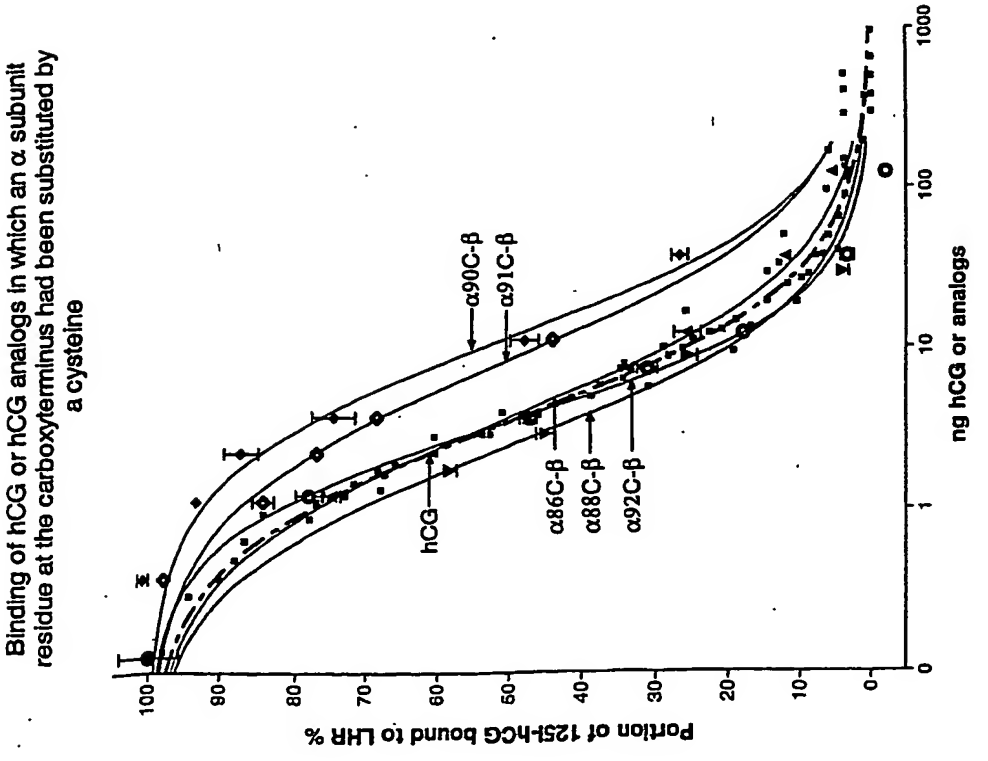


FIGURE 3A

FIGURE 3

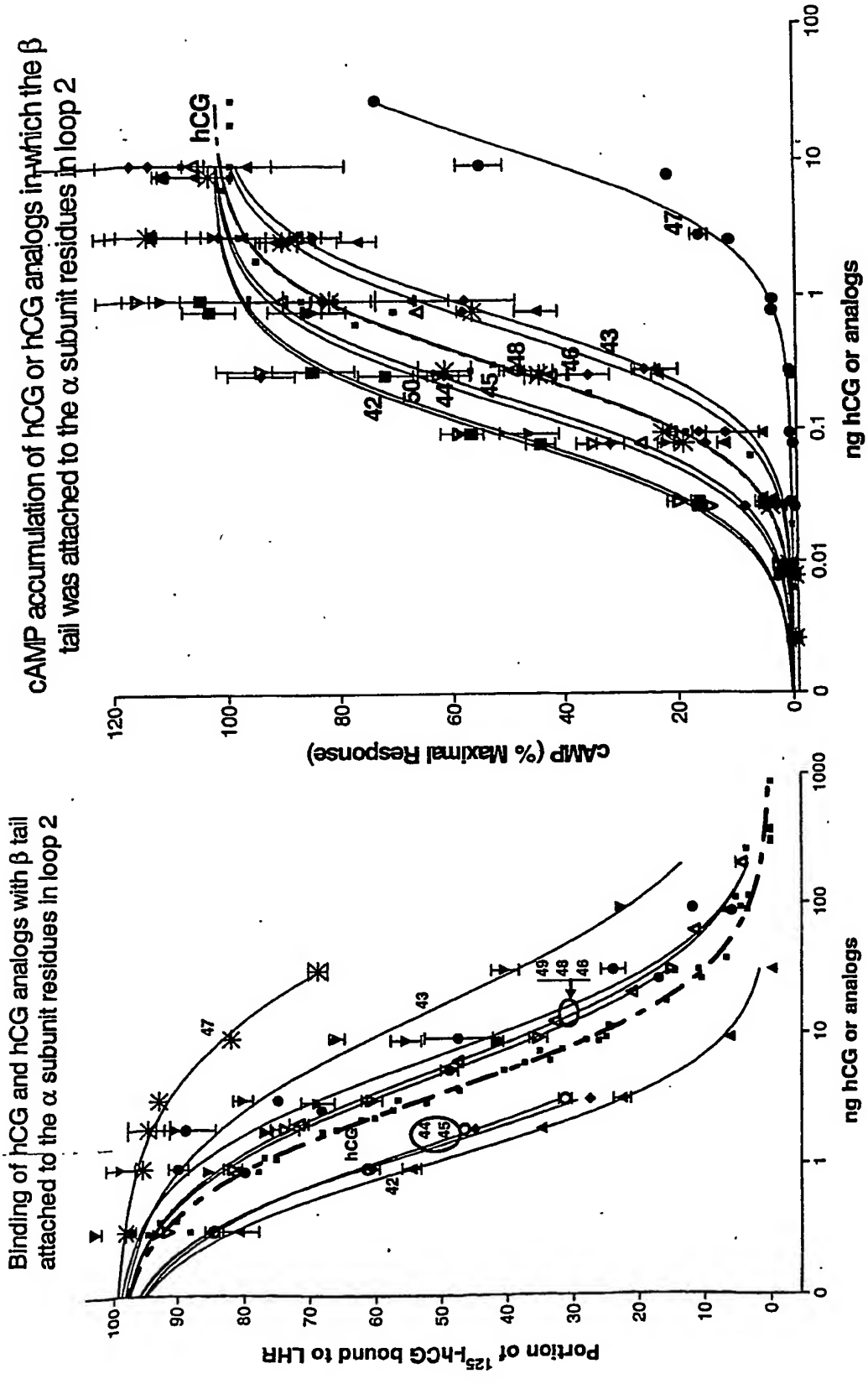


FIGURE 4B

FIGURE 4A

FIGURE 4

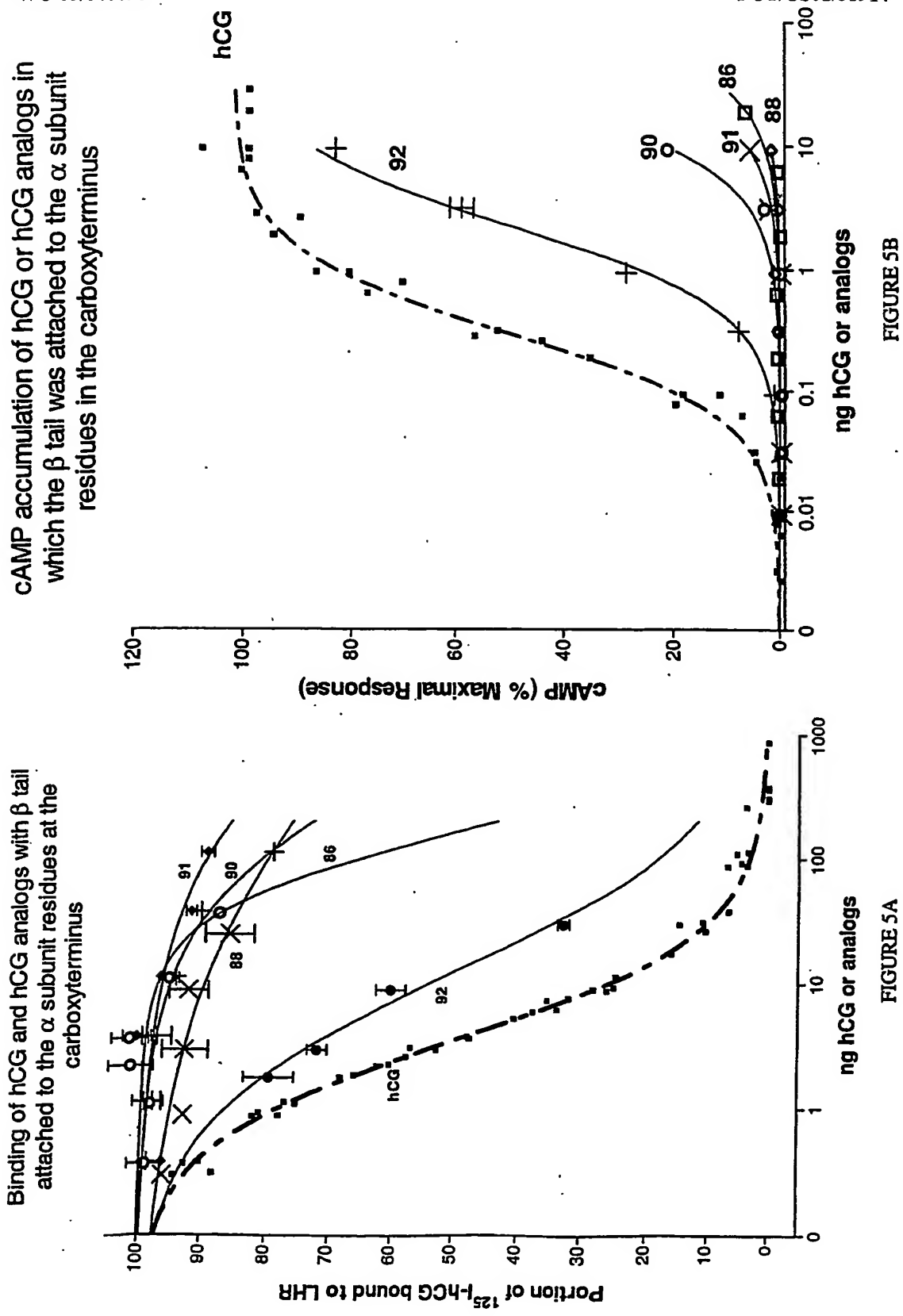


FIGURE 5

FIGURE 5A

FIGURE 5B

Figure 6. Binding and signal transduction activities of the analogs in which BLA was attached to the α subunit residue.

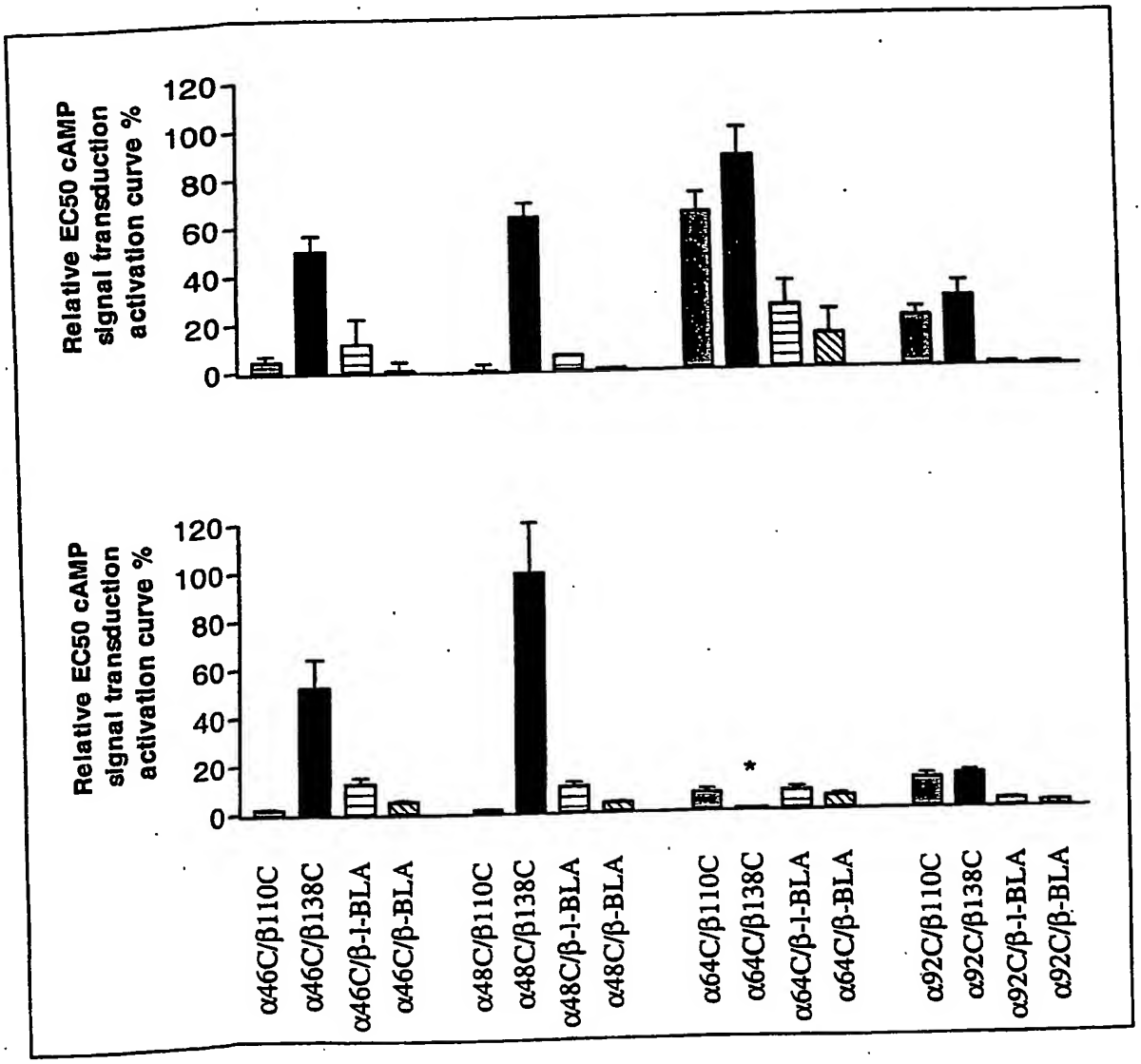


Figure 7: Amino acid sequences of the α-subunit and mutants having a substituted cysteine. (Note, the mutations are upper case and highlighted. These were prepared by standard cassette mutagenesis and PCR mutagenesis methods that are standard in the art.)

```
                    10        20        30        40        50        60        70        80        90
α-hCG (SEQ ID NO: 1): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αQ5C  (SEQ ID NO: 2):  apdvCdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αL12C (SEQ ID NO: 3): apdvqdcpectCqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αN15C (SEQ ID NO: 4): apdvqdcpectlqeCpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αF17C (SEQ ID NO: 5): apdvqdcpectlqenpCfsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αL22C (SEQ ID NO: 6): apdvqdcpectlqenpffsqpCapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αQ27C (SEQ ID NO: 7): apdvqdcpectlqenpffsqpgapilCcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αL22C (SEQ ID NO: 8): apdvqdcpectCqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αR35C (SEQ ID NO: 9): apdvqdcpectlqenpffsqpgapilqcmgccfsCayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αY37C (SEQ ID NO: 10): apdvqdcpectlqenpffsqpgapilqcmgccfsraCptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αP38C (SEQ ID NO: 11): apdvqdcpectlqenpffsqpgapilqcmgccfsrayCtplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αT39C (SEQ ID NO: 12): apdvqdcpectlqenpffsqpgapilqcmgccfsraypCplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αP40C (SEQ ID NO: 13): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptClrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αL41C (SEQ ID NO: 14): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptpCrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αR42C (SEQ ID NO: 15): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplCskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αS43C (SEQ ID NO: 16): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrCkktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αK44C (SEQ ID NO: 17): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrsCktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αK45C (SEQ ID NO: 18): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskCtmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αT46C (SEQ ID NO: 19): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskkCmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αM47C (SEQ ID NO: 20): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktClvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αL48C (SEQ ID NO: 21): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmCvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αV49C (SEQ ID NO: 22): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlCqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αQ50C (SEQ ID NO: 23): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvCknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αK51C (SEQ ID NO: 24): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqCnvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αN52C (SEQ ID NO: 25): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqkCvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αV53C (SEQ ID NO: 26): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknCtsestccvaksynrvtvmggfkvenhtachcstcyyhks
αE56C (SEQ ID NO: 27): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsCstccvaksynrvtvmggfkvenhtachcstcyyhks
αS64C (SEQ ID NO: 28): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaCsynrvtvmggfkvenhtachcstcyyhks
αV76C (SEQ ID NO: 29): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkCenhtachcstcyyhks
αT86C (SEQ ID NO: 30): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcsCcyyhks
αY88C (SEQ ID NO: 31): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstCyhks
αL89C (SEQ ID NO: 32): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyChks
αH90C (SEQ ID NO: 33): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyCks
αK91C (SEQ ID NO: 34): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhCs
αS92C (SEQ ID NO: 35): apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhkC
```

Figure 8: Amino acid sequences of the β-subunit analogs. (Note, the substituted cysteine is in uppercase and highlighted.)

hCGβ (SEQ ID NO: 36):

```
          10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130       140
alcrrsttdcggpkdhpltcddprfqdsssskapppslpspsrlpgpsdtpilpq
```

hCG-S138Cβ (SEQ ID NO: 37):

```
          10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130       140
alcrrsttdcggpkdhpltcddprfqdsssskapppslpspsrlpgpCdtpilpq
```

CFC101-114β (SEQ ID NO: 38):

```
          10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130       140
alcrrsttdctvrglgpsycsfgefqdsssskapppslpspsrlpgpsdtpilpq
```

CFC101-114,S138Cβ (SEQ ID NO: 39):

```
          10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130       140
alcrrsttdctvrglgpsycsfgefqdsssskapppslpspsrlpgpCdtpilpq
```

hFSHβ (SEQ ID NO: 40):

```
          10        20        30        40        50        60        70        80        90
nsceltnitiavekegcgfcitinttwcagycytrdlvykdparpkiqktctfkelvyetvrvpgcahhadslytypvatqchcgkcdsd-
       100       110
stdctvrglgpsycsfgemke
```

FC1-108β (SEQ ID NO: 41):

```
          10        20        30        40        50        60        70        80        90
nsceltnitiavekegcgfcitinttwcagycytrdlvykdparpkiqktctfkelvyetvrvpgcahhadslytypvatqchcgkcdsd-
       100       110       120       130
stdctvrglgpsycsfgefqdsssskapppslpspsrlpgpsdtpilpq
```

FC1-108,S132Cβ (SEQ ID NO: 42):

```
          10        20        30        40        50        60        70        80        90
nsceltnitiavekegcgfcitinttwcagycytrdlvykdparpkiqktctfkelvyetvrvpgcahhadslytypvatqchcgkcdsd-
       100       110       120       130
stdctvrglgpsycsfgefqdsssskapppslpspsrlpgpCdtpil
```

Figure 9.

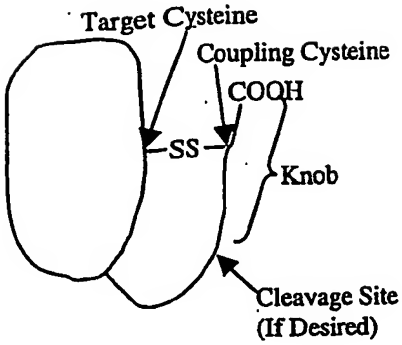


Figure 9A

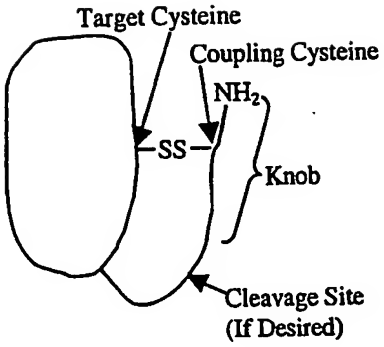


Figure 9B

Figure 10.

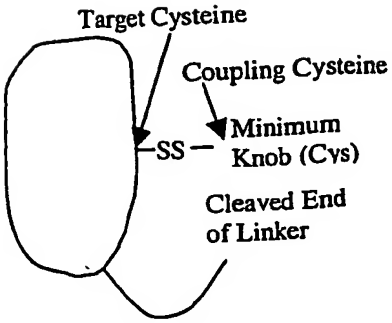


Figure 10A

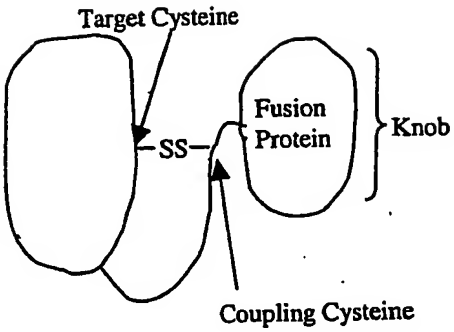


Figure 10B

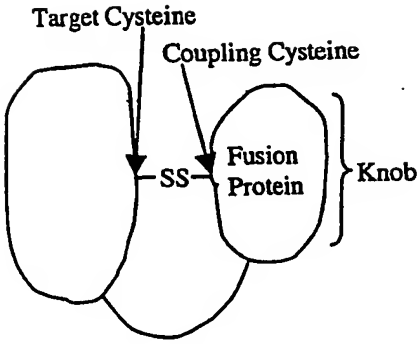


Figure 10C

Figure 11.

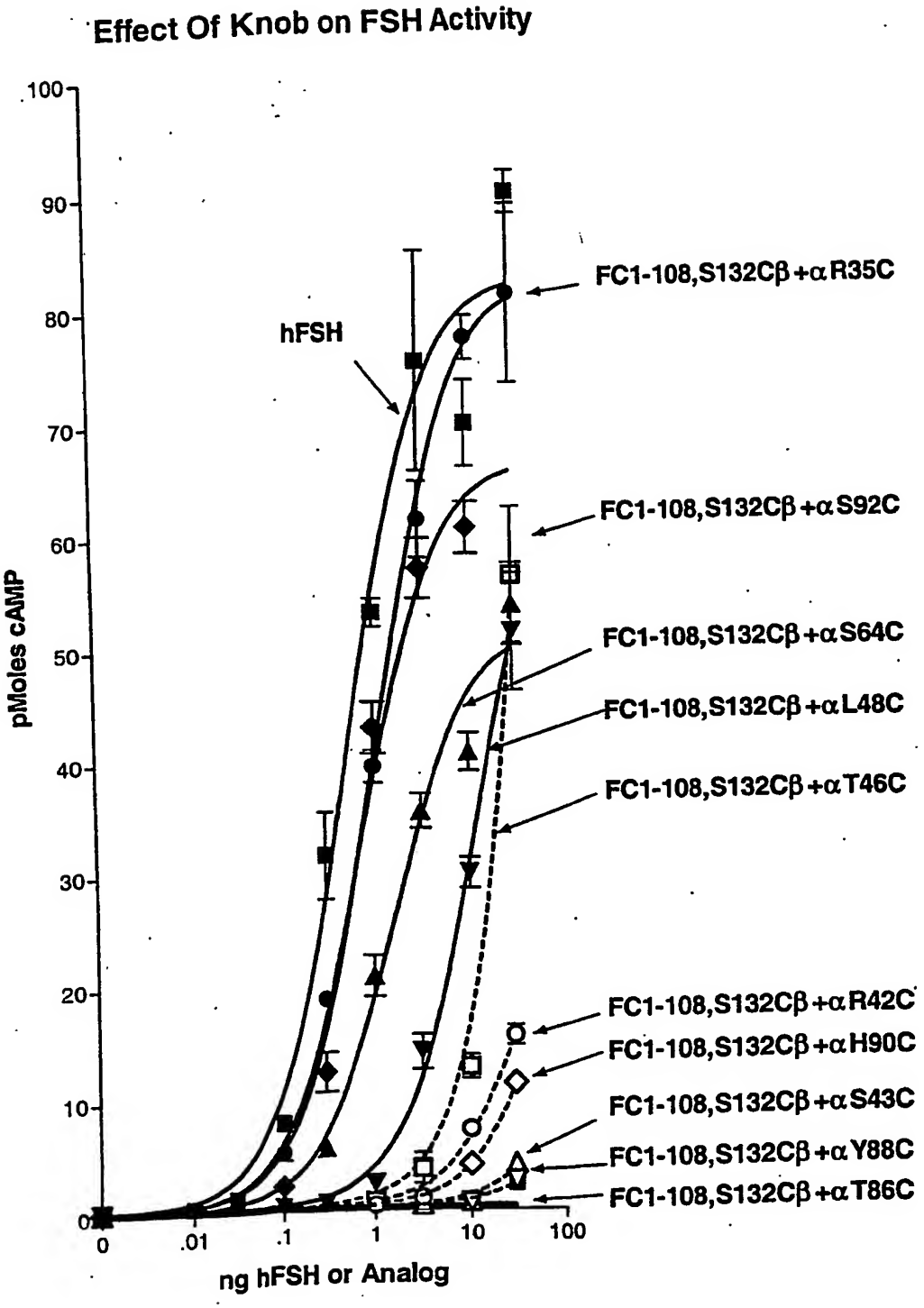

Effect Of Knob on FSH Activity
pMoles cAMP
ng hFSH or Analog
hFSH
FC1-108,S132Cβ+αR35C
FC1-108,S132Cβ+αS92C
FC1-108,S132Cβ+αS64C
FC1-108,S132Cβ+αL48C
FC1-108,S132Cβ+αT46C
FC1-108,S132Cβ+αR42C
FC1-108,S132Cβ+αH90C
FC1-108,S132Cβ+αS43C
FC1-108,S132Cβ+αY88C
FC1-108,S132Cβ+αT86C
0
10
20
30
40
50
60
70
80
90
100
0
.01
.1
1
10
100

Figure 12

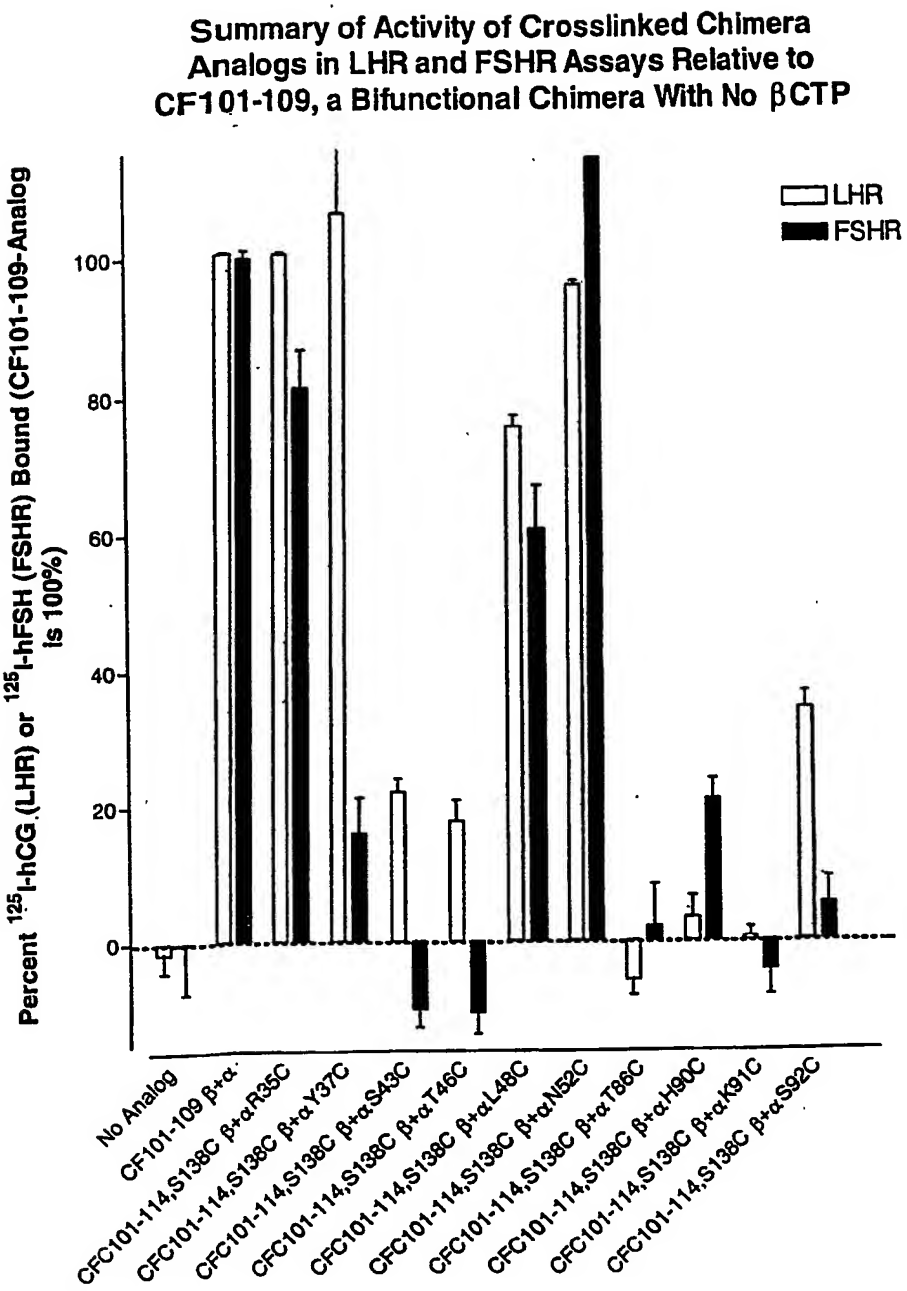

Summary of Activity of Crosslinked Chimera Analogs in LHR and FSHR Assays Relative to CF101-109, a Bifunctional Chimera With No βCTP
Percent 125I-hCG (LHR) or 125I-hFSH (FSHR) Bound (CF101-109-Analog Is 100%)
LHR
FSHR
100
80
60
40
20
0
No Analog
CF101-109 β+α
CFC101-114,S138C β+αR35C
CFC101-114,S138C β+αY37C
CFC101-114,S138C β+αS43C
CFC101-114,S138C β+αT46C
CFC101-114,S138C β+αL48C
CFC101-114,S138C β+αN52C
CFC101-114,S138C β+αT86C
CFC101-114,S138C β+αH90C
CFC101-114,S138C β+αK91C
CFC101-114,S138C β+αS92C

Figure 13

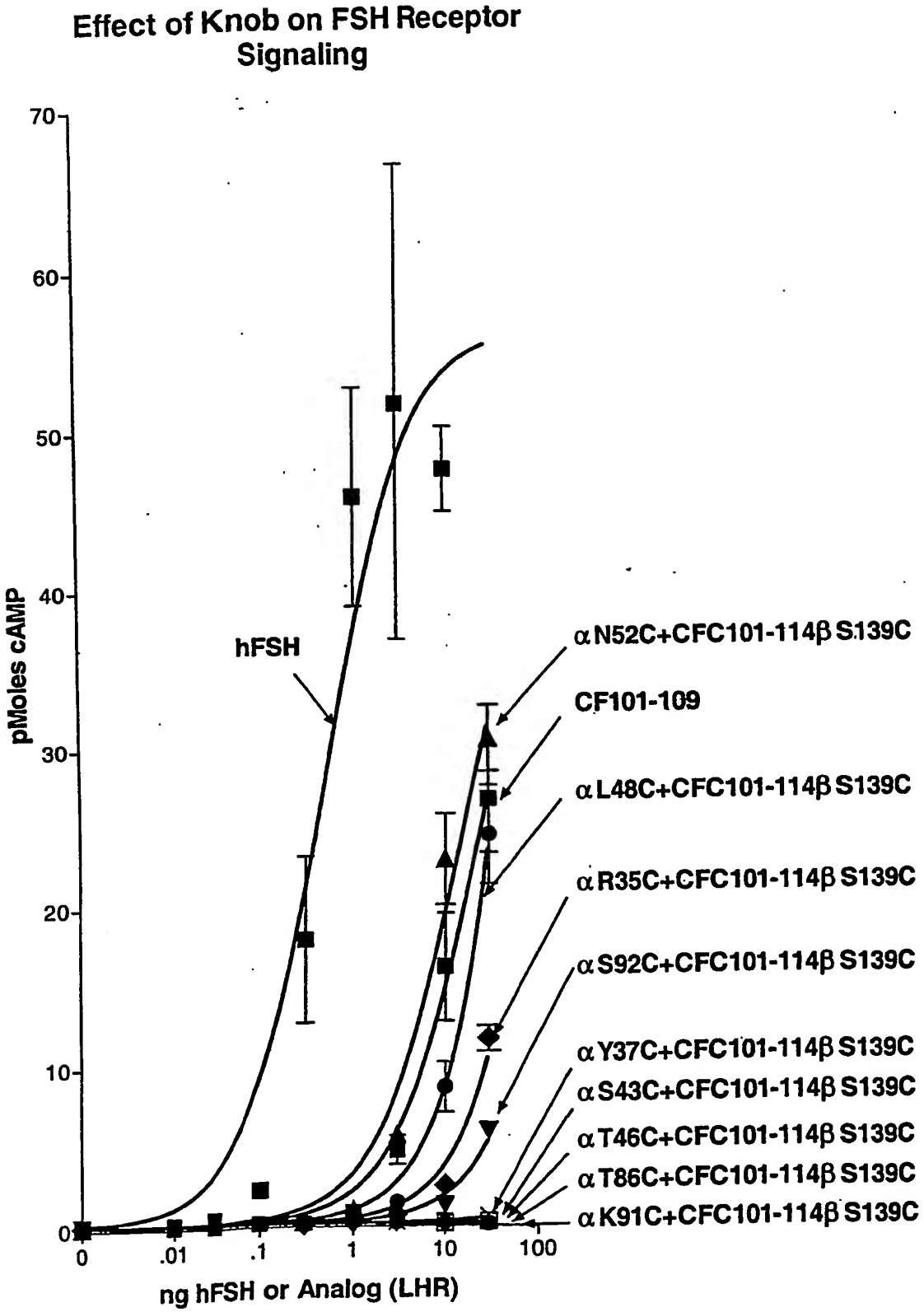

Effect of Knob on FSH Receptor Signaling
pMoles cAMP
70
60
50
40
30
20
10
0
0
.01
.1
1
10
100
ng hFSH or Analog (LHR)
hFSH
αN52C+CFC101-114β S139C
CF101-109
αL48C+CFC101-114β S139C
αR35C+CFC101-114β S139C
αS92C+CFC101-114β S139C
αY37C+CFC101-114β S139C
αS43C+CFC101-114β S139C
αT46C+CFC101-114β S139C
αT86C+CFC101-114β S139C
αK91C+CFC101-114β S139C

Figure 14

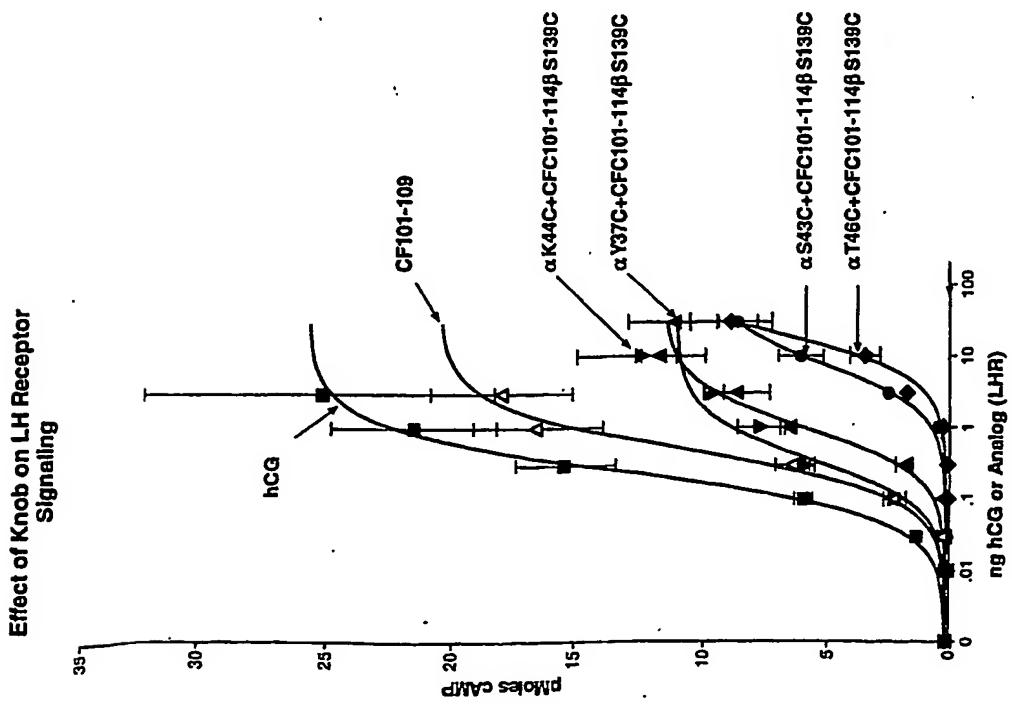


Figure 14A

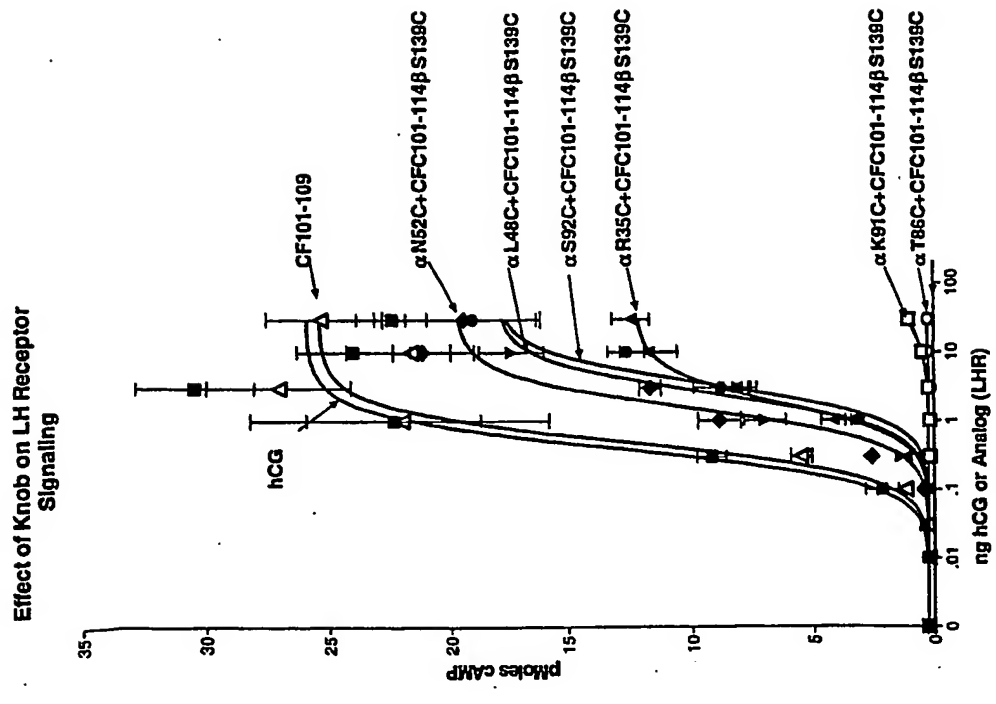


Figure 14B

Figure 15: Amino acid sequences of other analogs:

hCGβ,S138C-βLA(short) (SEQ ID NO: 43):

```
          10         20         30         40         50         60         70         80         90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
        100        110        120        130        140        150        160        170        180
alcrrsttdcggpkdhpltcddprfqdsssskappps1pspsrlpgpCdhpetlvkvkdaedqlgarvgyieldlnsgkilesfrpeer-
        190        200        210        220        230        240        250        260        270
fpmmstfkvllcgavlsridagqeqlgrrihysqndlveyspvtekhltdgmtvrelcsaaitmsdntaanllltiggpkeltaflhn-
        280        290        300        310        320        330        340        350        360
mgdhvtrldrwepelneaipnderdttmpvamattlrklltgelltlasrqqlidwmeadkvagpllrsalpagwfiadksgagergsr-
        370        380        390        400
giiaalgpdgkpsrivviyttgsqatmdernrqiaeigaslikhw
```

hCGβ,S138C-βLA(long) (SEQ ID NO: 44):

```
          10         20         30         40         50         60         70         80         90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
        100        110        120        130        140        150        160        170        180
alcrrsttdcggpkdhpltcddprfqdsssskappps1pspsrlpgpCdtpilpqhpetlvkvkdaedqlgarvgyieldlnsgkiles-
        190        200        210        220        230        240        250        260        270
frpeerfpmmstfkvllcgavlsridagqeqlgrrihysqndlveyspvtekhltdgmtvrelcsaaitmsdntaanllltiggpkel-
        280        290        300        310        320        330        340        350        360
taflhnmgdhvtrldrwepelneaipnderdttmpvamattlrklltgelltlasrqqlidwmeadkvagpllrsalpagwfiadksga
        370        380        390        400        410
gergsrgiiaalgpdgkpsrivviyttgsqatmdernrqiaeigaslikhw
```

hCGβ,δ116-135,S138C (SEQ ID NO: 45):

```
          10         20         30         40         50         60         70         80         90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
        100        110        120
alcrrsttdcggpkdhpltcddprfgpCdtpilpq
```

Figure 15 (cont'd.)

hCGβ,δ121-135,S138C (SEQ ID NO: 46):

```
         10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130
alcrrsttdcggpkdhpltcddprfqdsssgpCdtpilpq
```

hCGβ,δ126-135,S138C (SEQ ID NO: 47):

```
         10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130
alcrrsttdcggpkdhpltcddprfqdsssskapppgpCdtpilpq
```

hCGβ,δ131-135,S138C (SEQ ID NO: 48):

```
         10        20        30        40        50        60        70        80        90
skeplrprcrpinatlavekegcpvcitvntticagycptmtrvlqgvlpalpqvvcnyrdvrfesirlpgcprgvpvvsyavalscqc-
       100       110       120       130       140
alcrrsttdcggpkdhpltcddprfqdsssskapppslpsgpCdtpilpq
```



```
                                  10        20        30        40        50        60        70        80        90
αK91E (SEQ ID NO: 49):  apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhEs

αK91M (SEQ ID NO: 50):  apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrskktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhMs

αK44A (SEQ ID NO: 51):  apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrsAktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks

αK44E,K45Q (SEQ ID NO: 52):  apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrsEQtmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks

αK44R (SEQ ID NO: 53):  apdvqdcpectlqenpffsqpgapilqcmgccfsrayptplrsRktmlvqknvtsestccvaksynrvtvmggfkvenhtachcstcyyhks
```

Figure 16

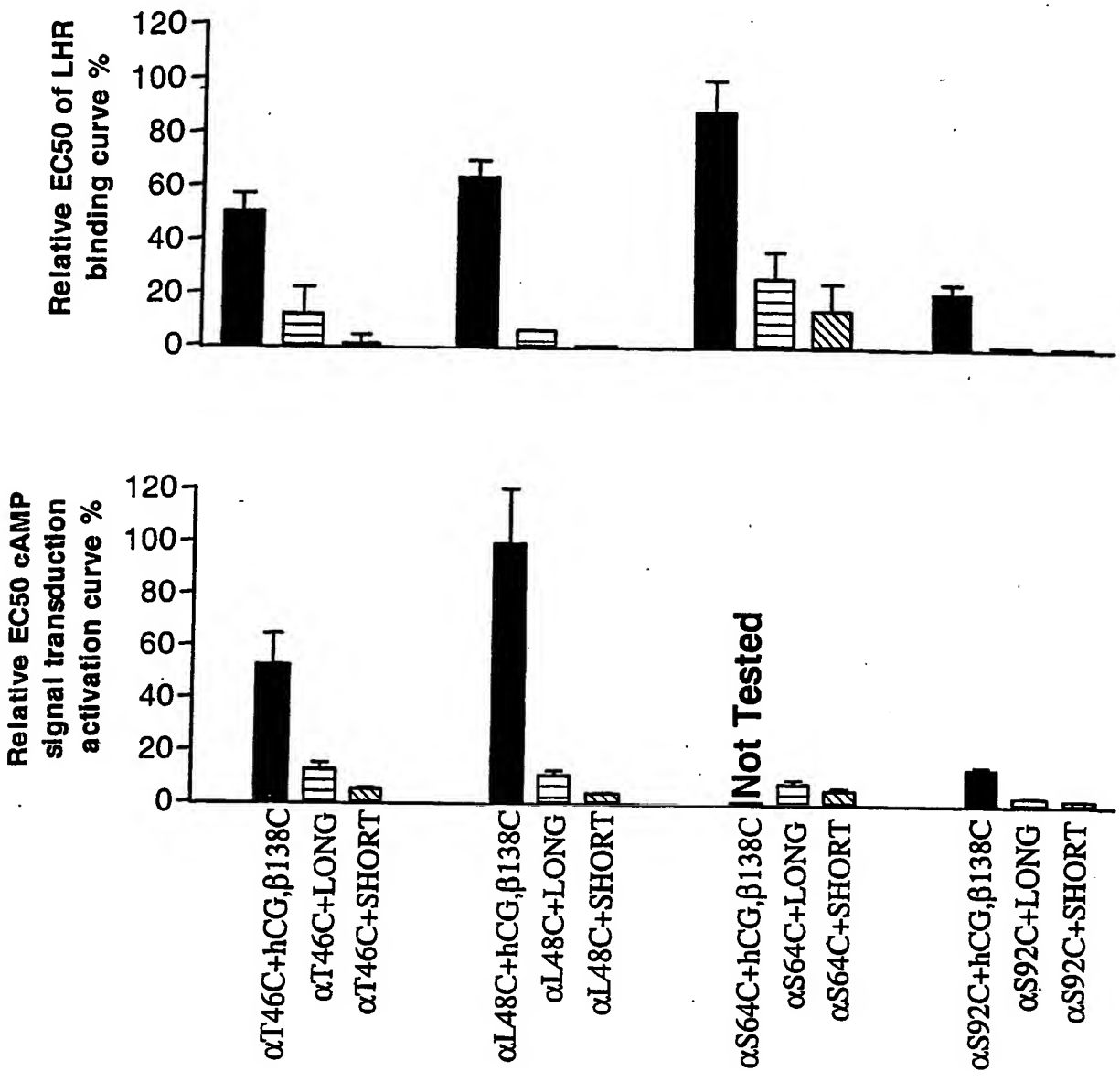

Relative EC50 of LHR binding curve %
120
100
80
60
40
20
0
Relative EC50 cAMP signal transduction activation curve %
120
100
80
60
40
20
0
Not Tested
αT46C+hCG,β138C
αT46C+LONG
αT46C+SHORT
αL48C+hCG,β138C
αL48C+LONG
αL48C+SHORT
αS64C+hCG,β138C
αS64C+LONG
αS64C+SHORT
αS92C+hCG,β138C
αS92C+LONG
αS92C+SHORT

Figure 17

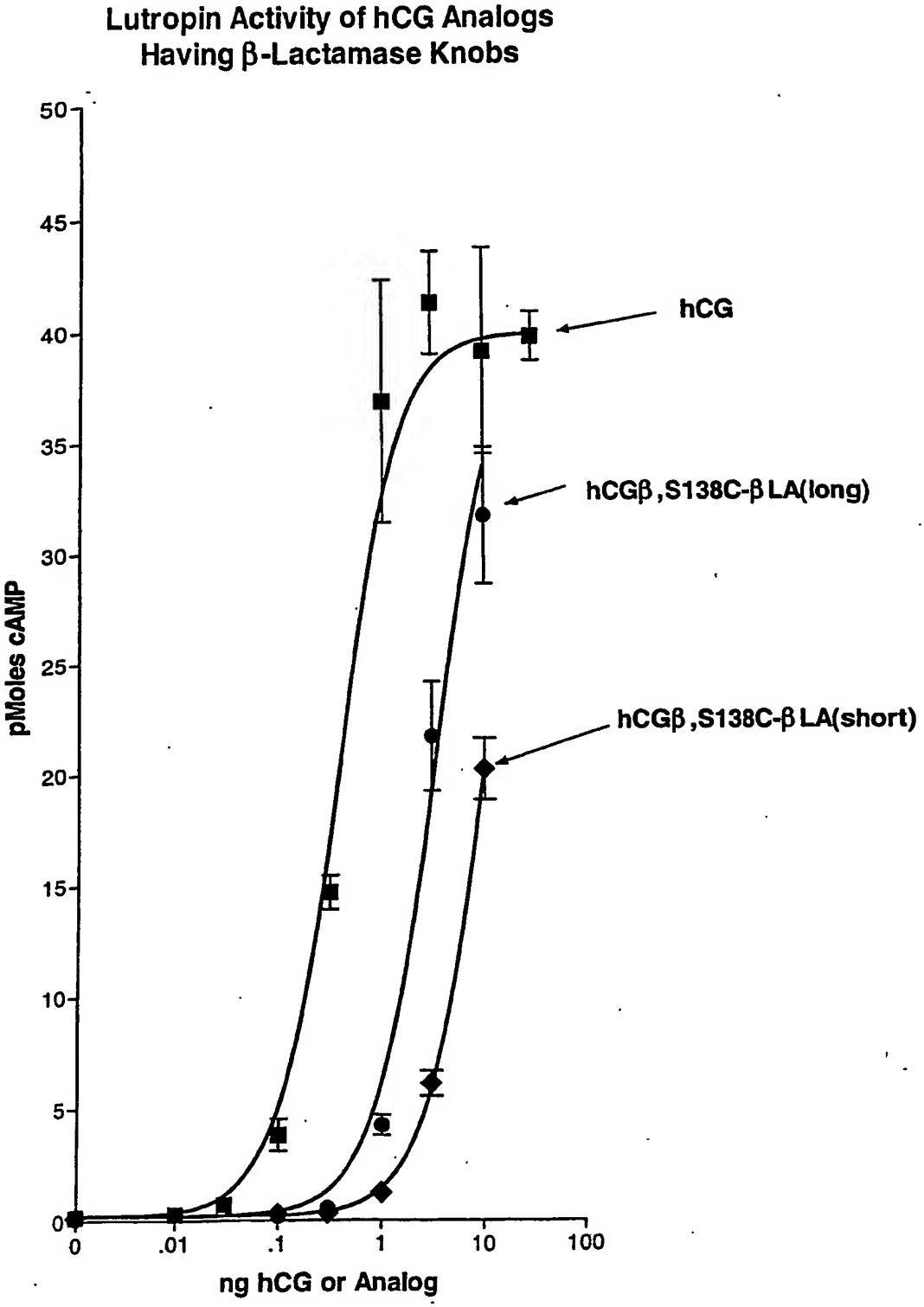

Lutropin Activity of hCG Analogs
Having β-Lactamase Knobs
pMoles cAMP
50
45
40
35
30
25
20
15
10
5
0
0
.01
.1
1
10
100
ng hCG or Analog
hCG
hCGβ,S138C-β LA(long)
hCGβ,S138C-β LA(short)

Figure 18

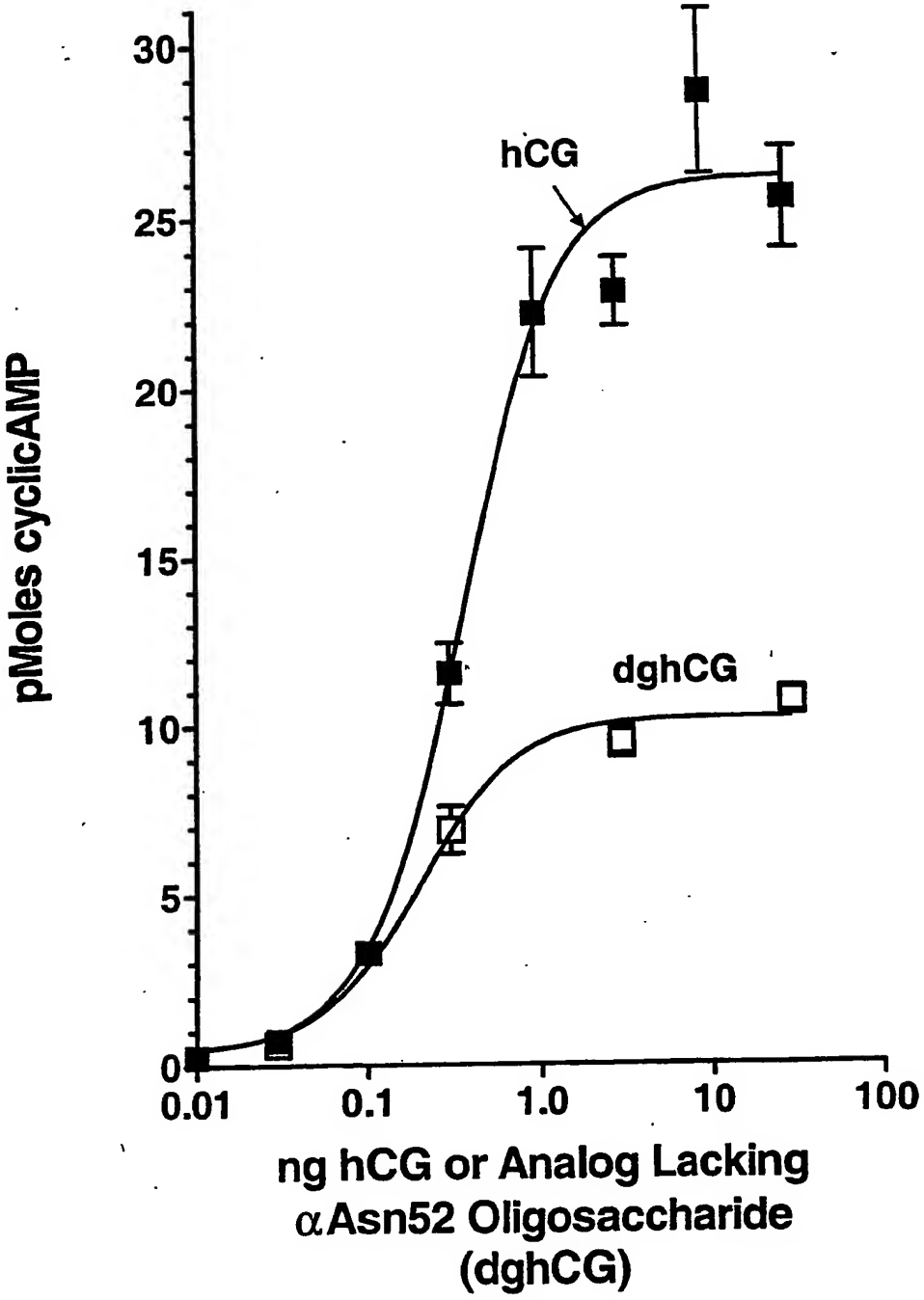
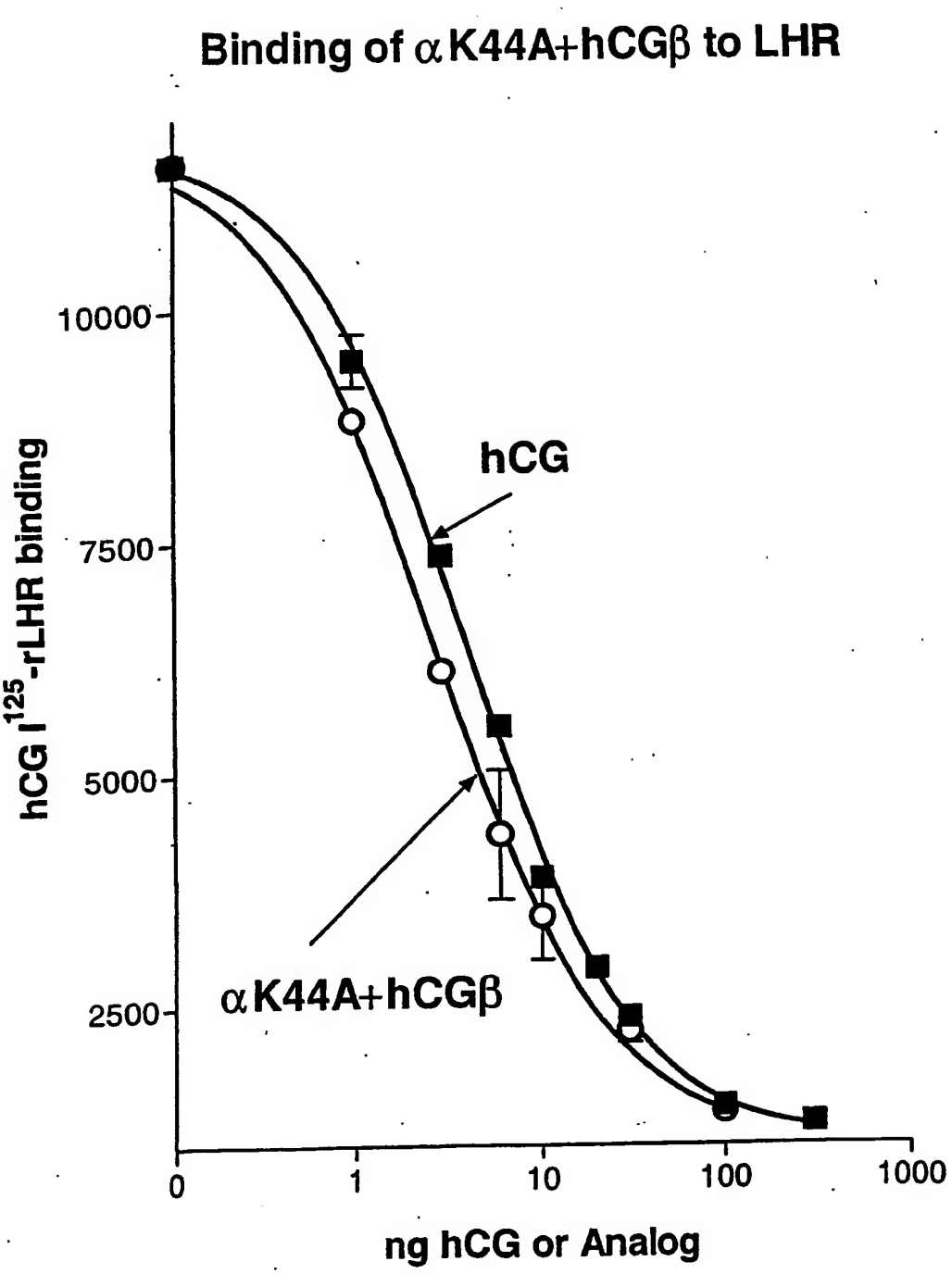

30
25
20
15
10
5
0
pMoles cyclicAMP
hCG
dghCG
0.01
0.1
1.0
10
100
ng hCG or Analog Lacking
αAsn52 Oligosaccharide
(dghCG)

FIGURE 19


Binding of αK44A+hCGβ to LHR
hCG I125-rLHR binding
10000
7500
5000
2500
hCG
αK44A+hCGβ
0
1
10
100
1000
ng hCG or Analog

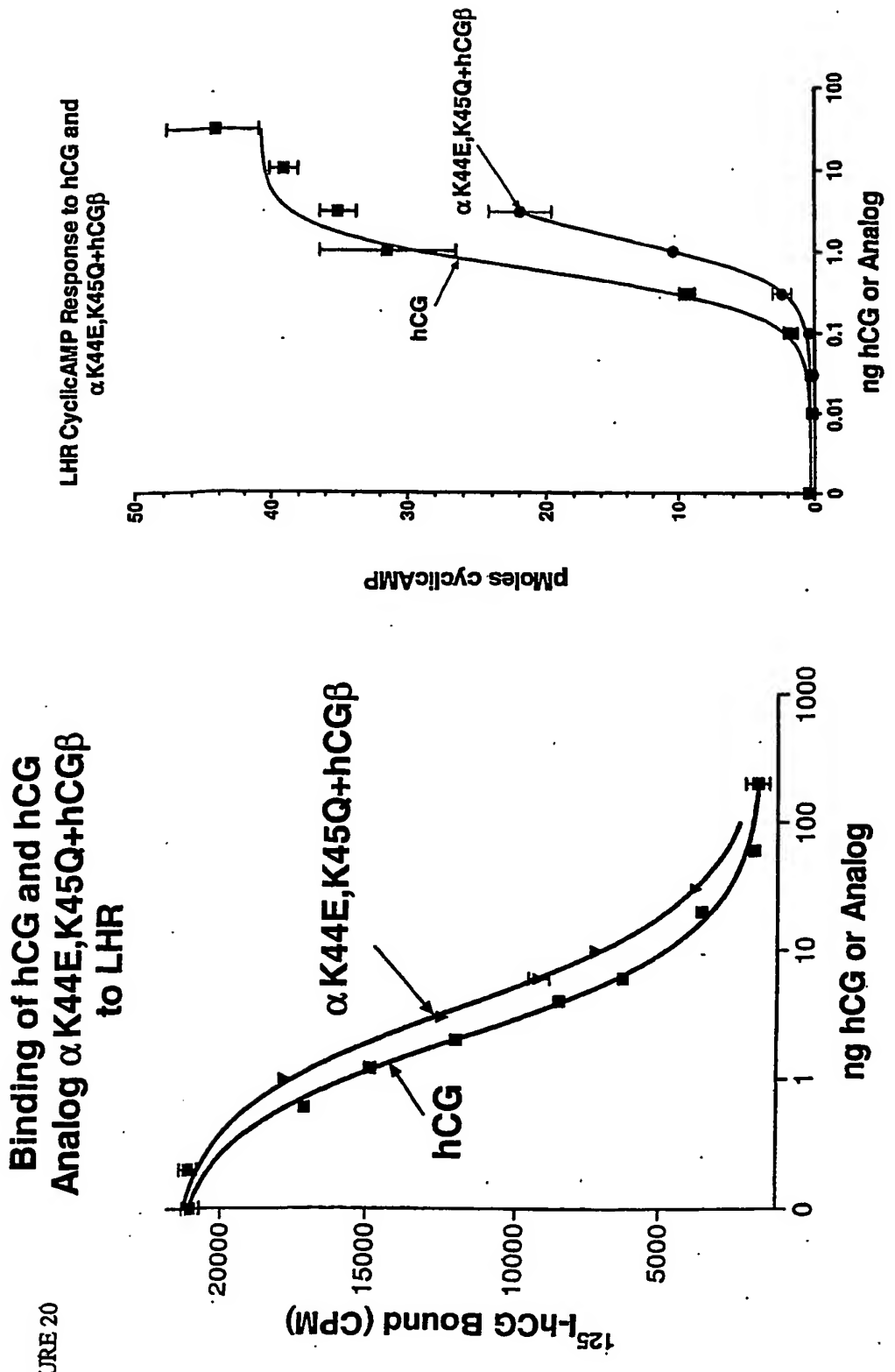


FIGURE 20

FIGURE 20A

FIGURE 20B

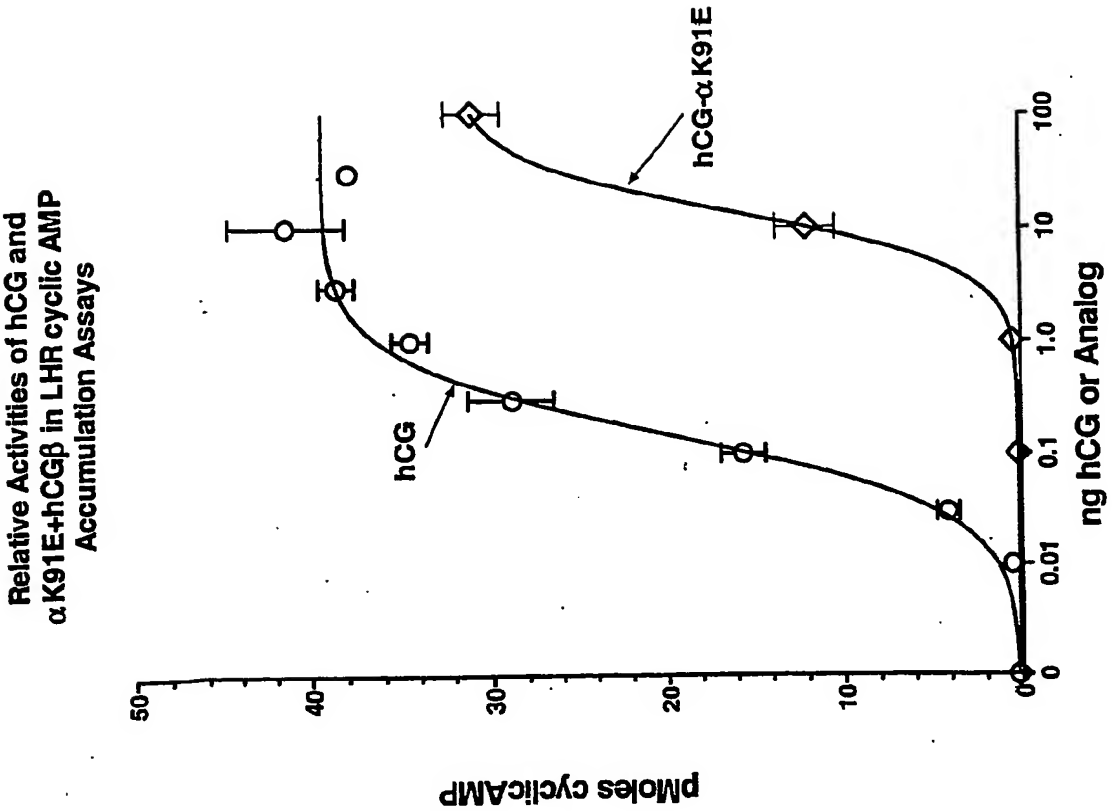


FIGURE 21B

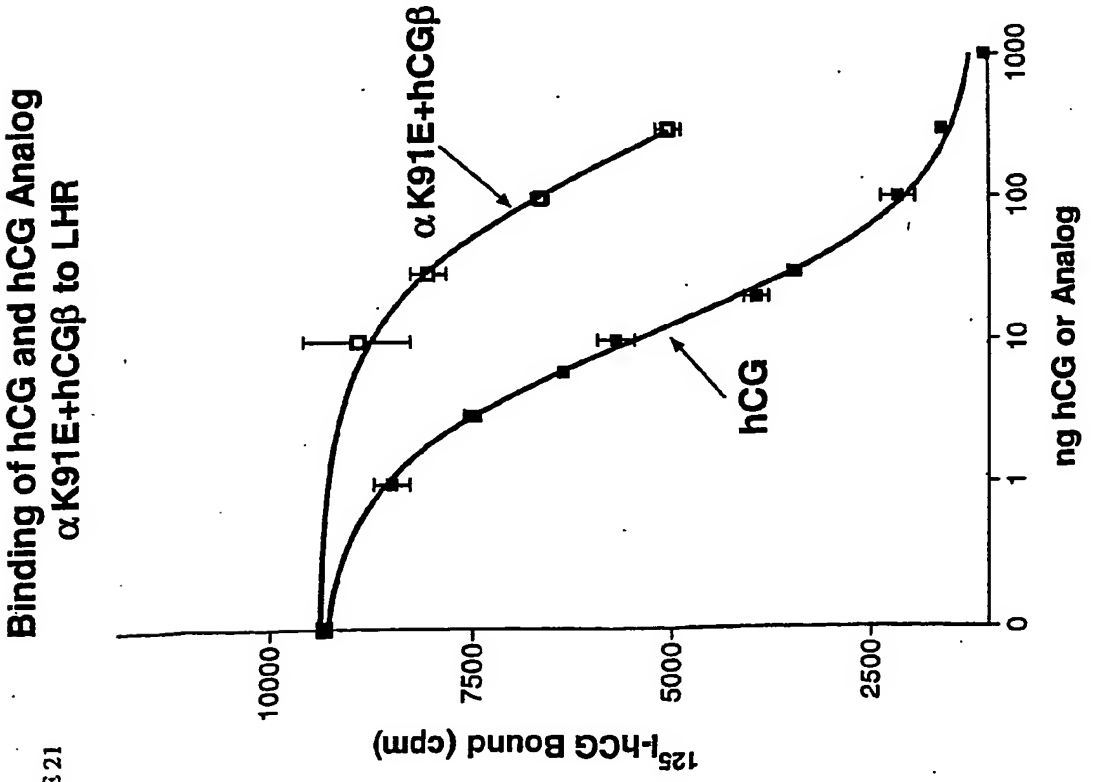


FIGURE 21

FIGURE 21A

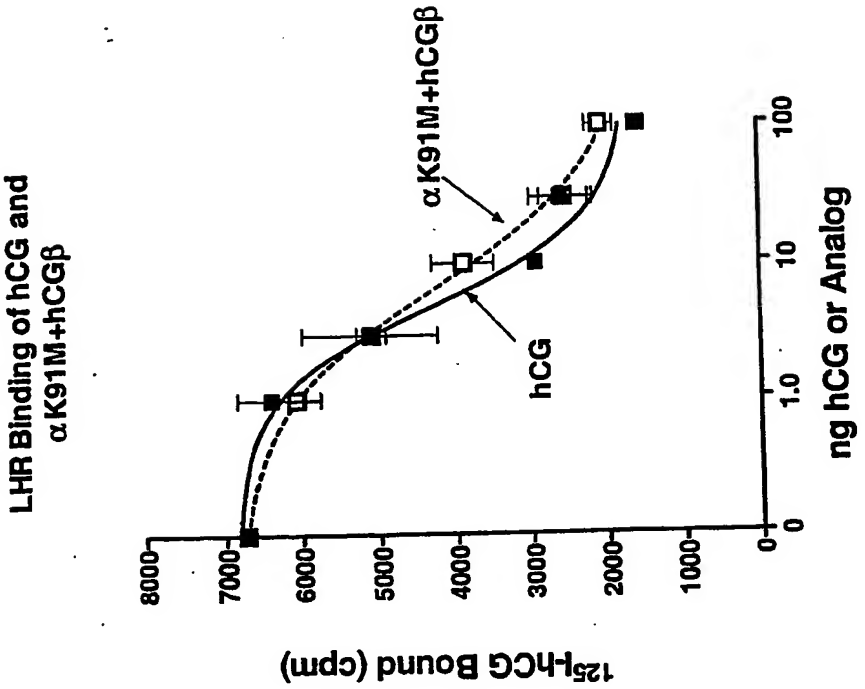


FIGURE 22B

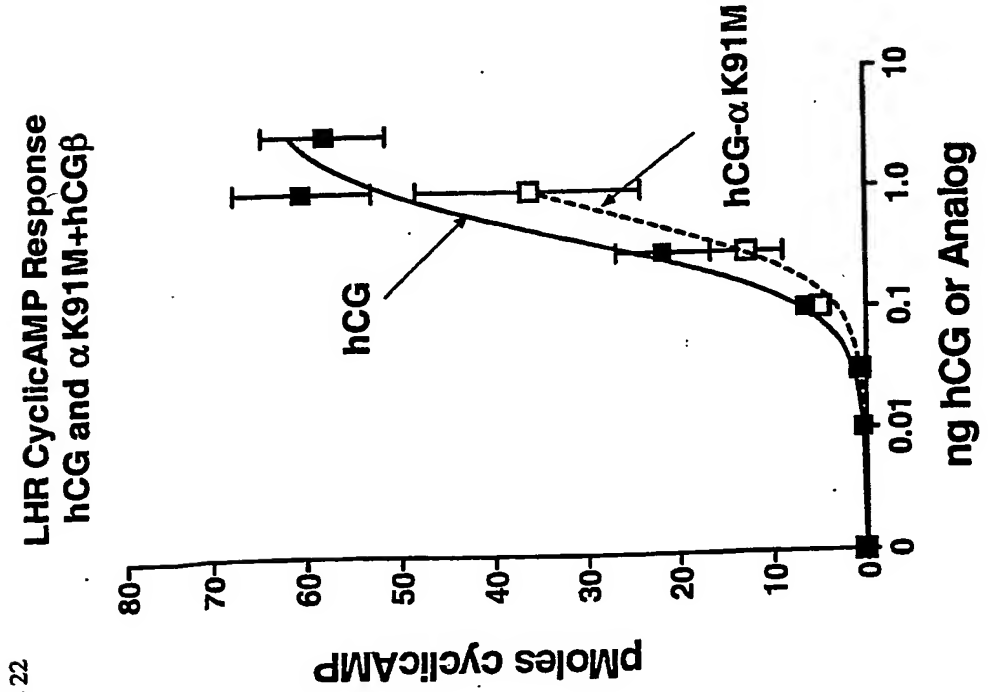


FIGURE 22A

FIGURE 22

FIGURE 23

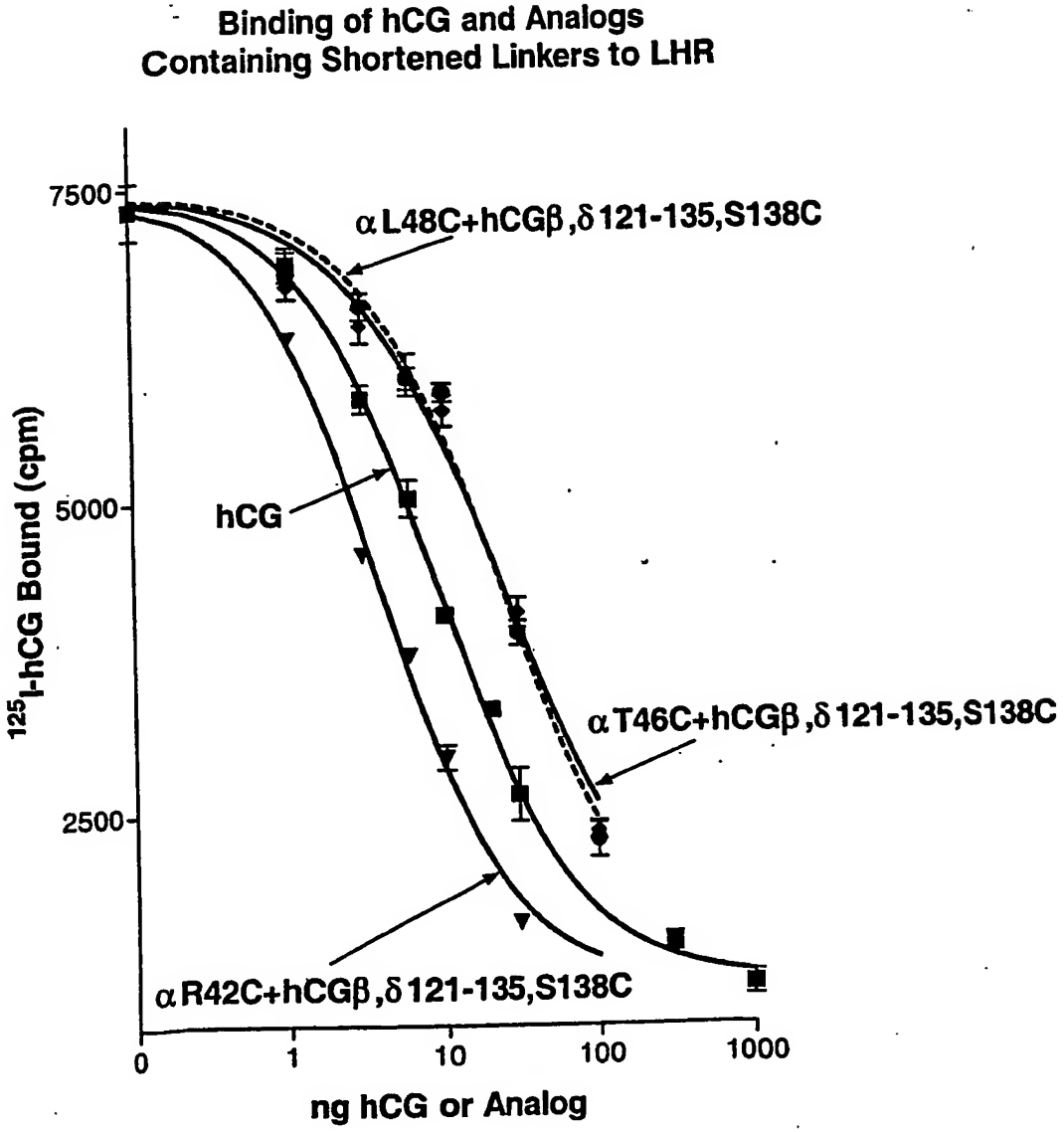

Binding of hCG and Analogs
Containing Shortened Linkers to LHR
7500
5000
2500
^{125}I-hCG Bound (cpm)
αL48C+hCGβ,δ121-135,S138C
hCG
αT46C+hCGβ,δ121-135,S138C
αR42C+hCGβ,δ121-135,S138C
0
1
10
100
1000
ng hCG or Analog

FIGURE 24

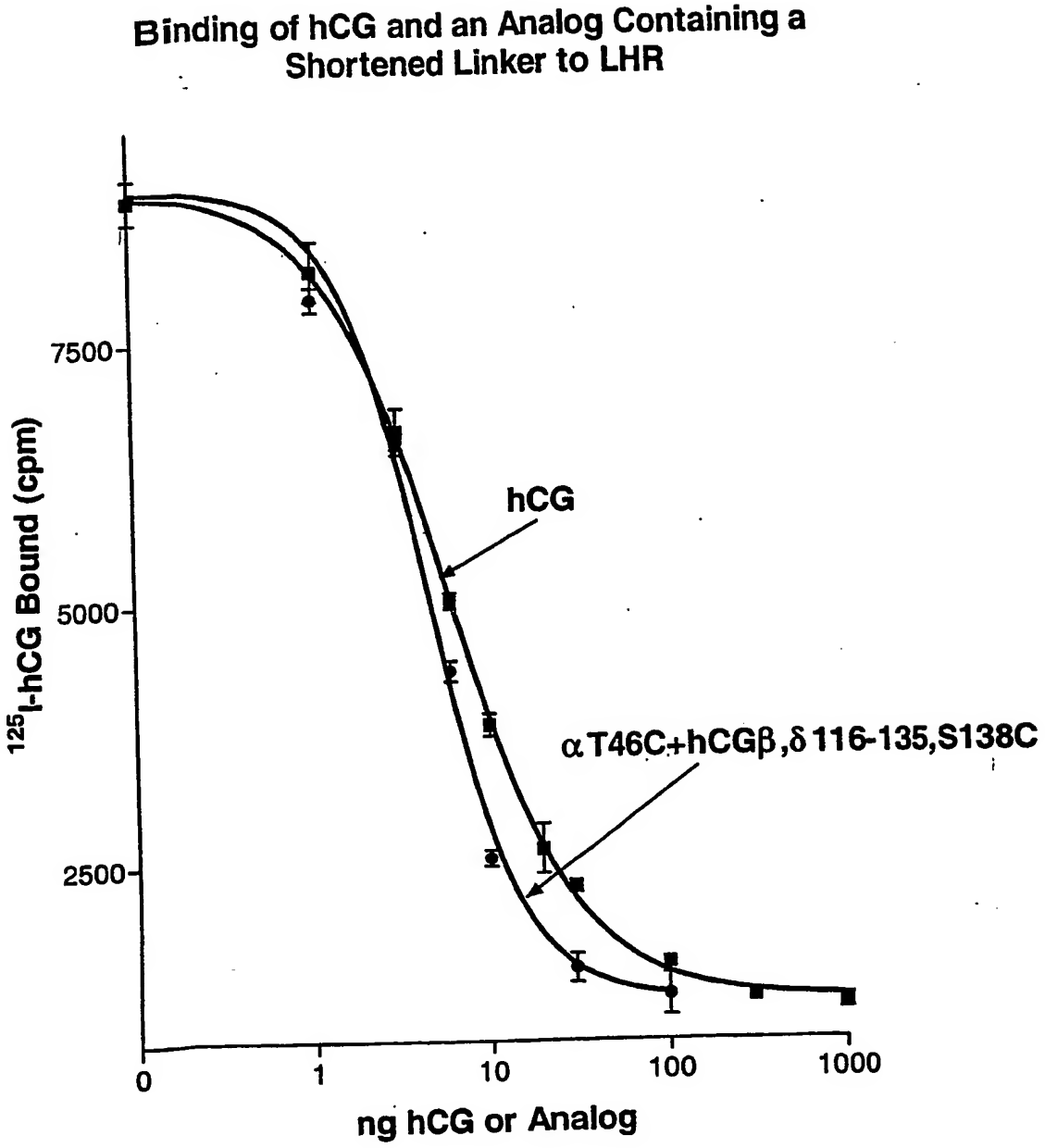
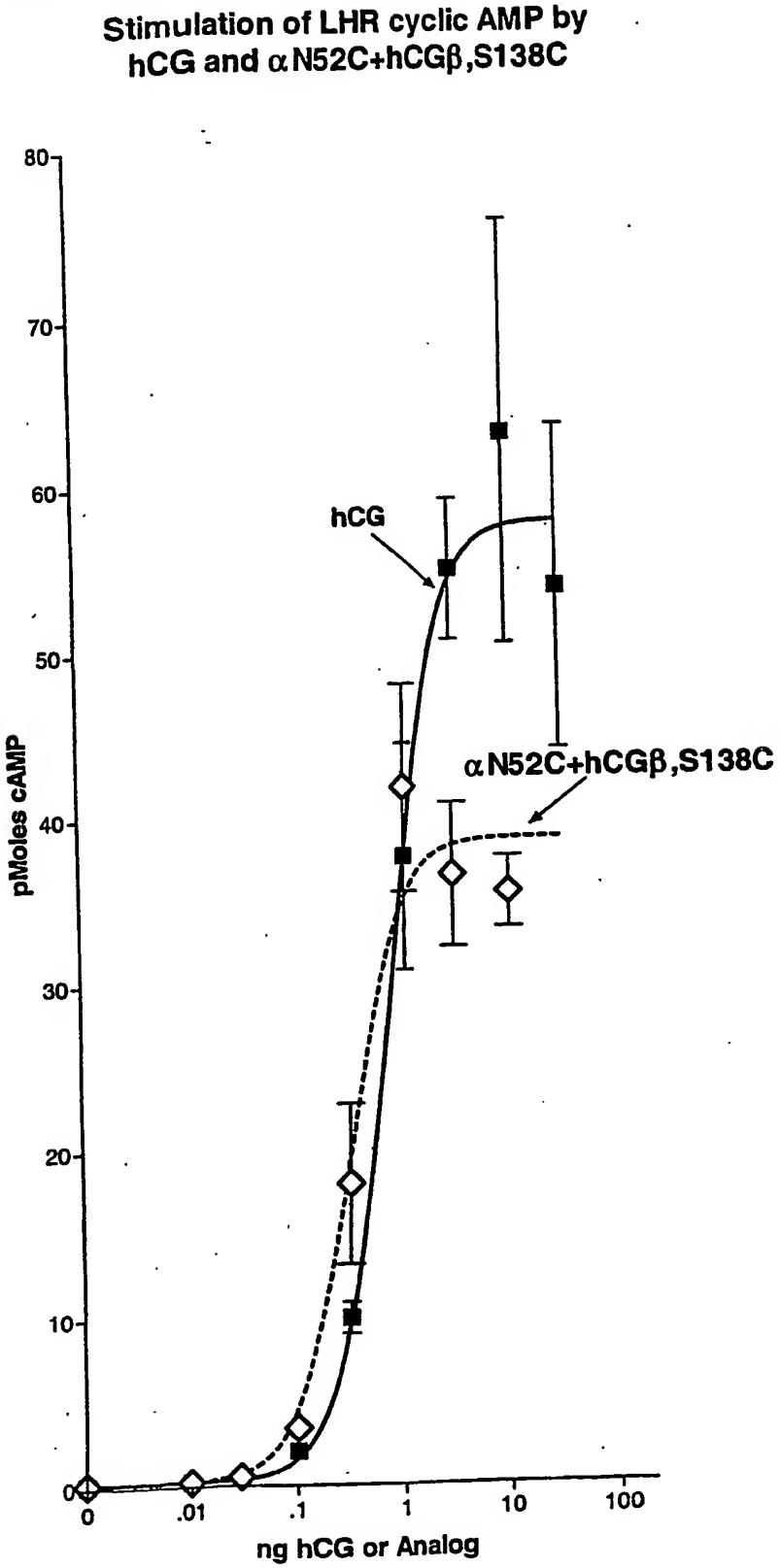

Binding of hCG and an Analog Containing a Shortened Linker to LHR
^{125}I-hCG Bound (cpm)
7500
5000
2500
hCG
αT46C+hCGβ,δ116-135,S138C
0
1
10
100
1000
ng hCG or Analog

FIGURE 25


Stimulation of LHR cyclic AMP by
hCG and αN52C+hCGβ,S138C
pMoles cAMP
80
70
60
50
40
30
20
10
0
hCG
αN52C+hCGβ,S138C
0
.01
.1
1
10
100
ng hCG or Analog

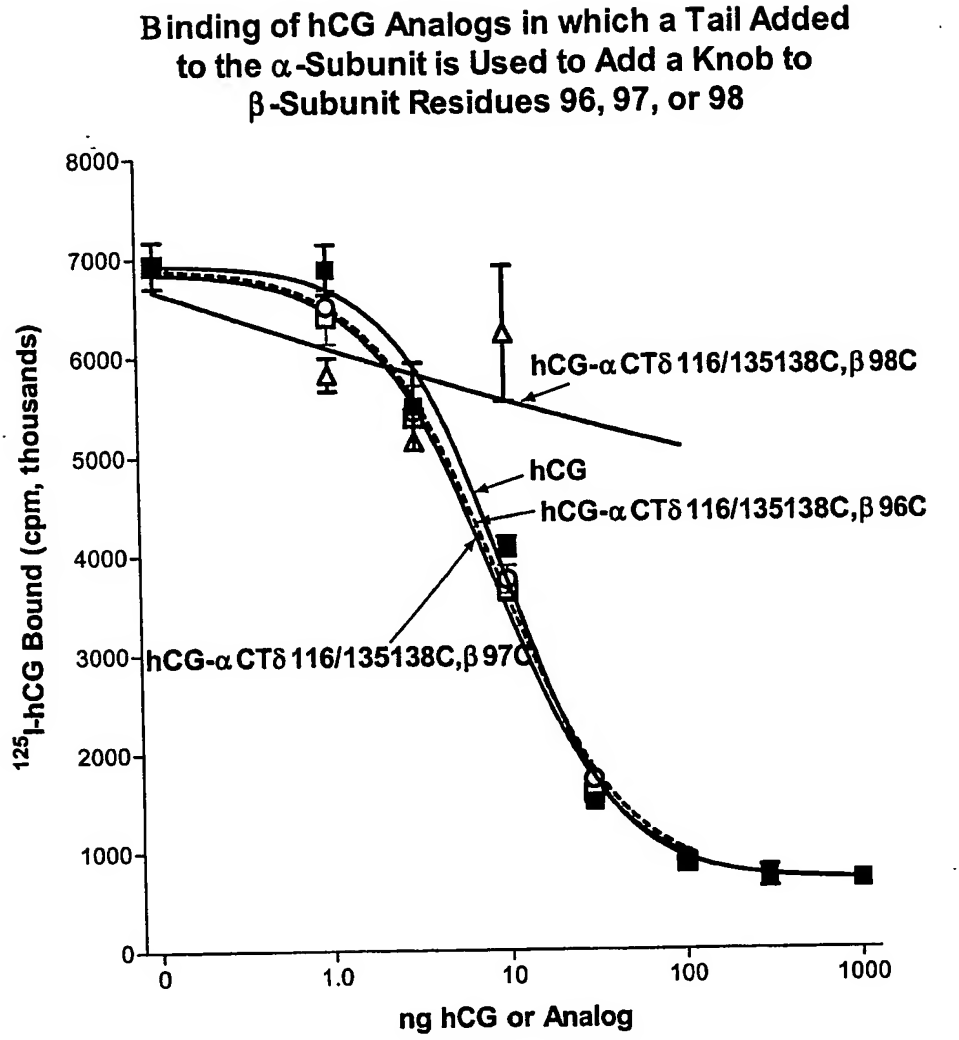

Binding of hCG Analogs in which a Tail Added to the α-Subunit is Used to Add a Knob to β-Subunit Residues 96, 97, or 98
^{125}I-hCG Bound (cpm, thousands)
8000
7000
6000
5000
4000
3000
2000
1000
0
0
1.0
10
100
1000
ng hCG or Analog
hCG-αCTδ116/135138C,β98C
hCG
hCG-αCTδ116/135138C,β96C
hCG-αCTδ116/135138C,β97C

Figure 26

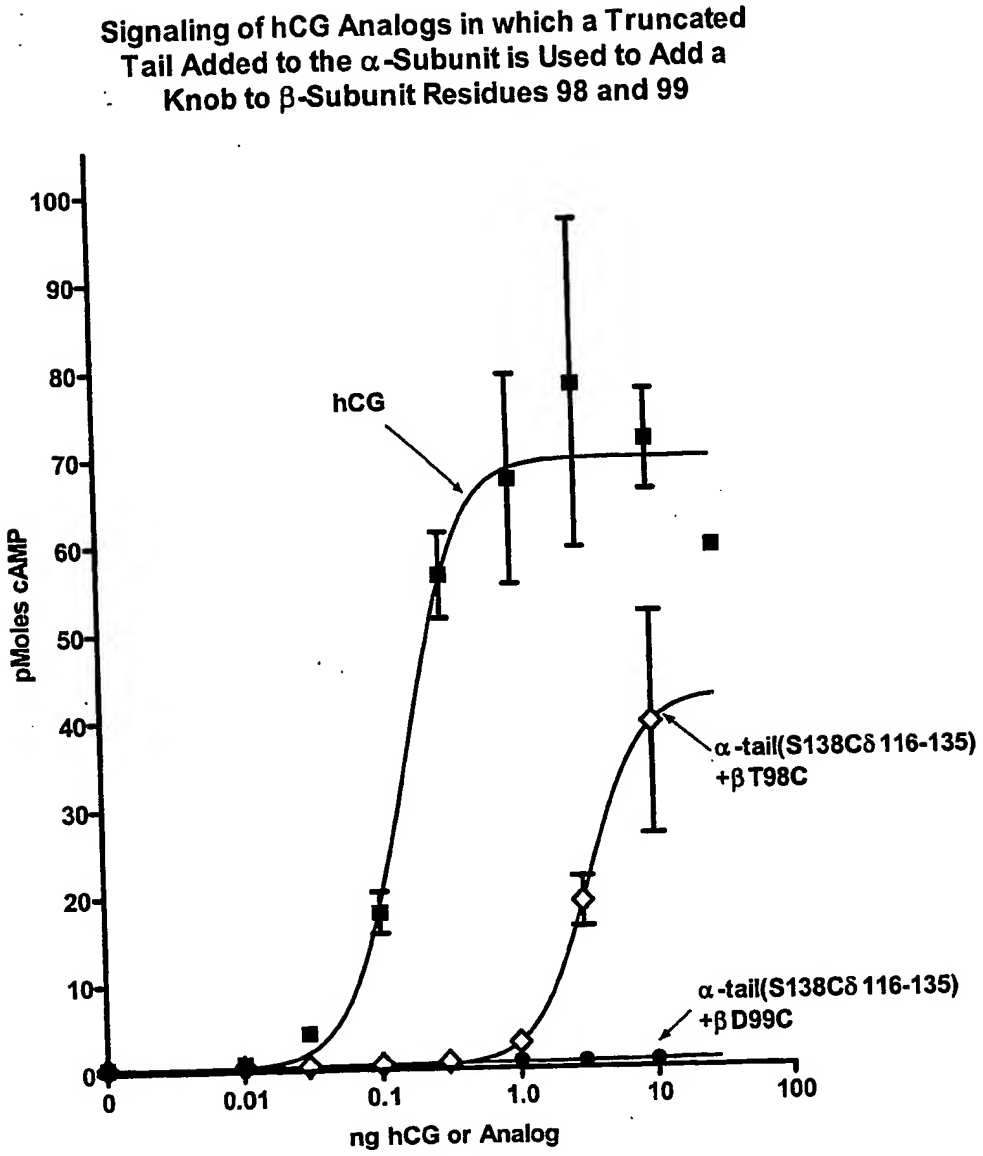

Signaling of hCG Analogs in which a Truncated Tail Added to the α-Subunit is Used to Add a Knob to β-Subunit Residues 98 and 99
pMoles cAMP
100
90
80
70
60
50
40
30
20
10
0
hCG
α-tail(S138Cδ 116-135) +β T98C
α-tail(S138Cδ 116-135) +β D99C
0
0.01
0.1
1.0
10
100
ng hCG or Analog

Figure 27

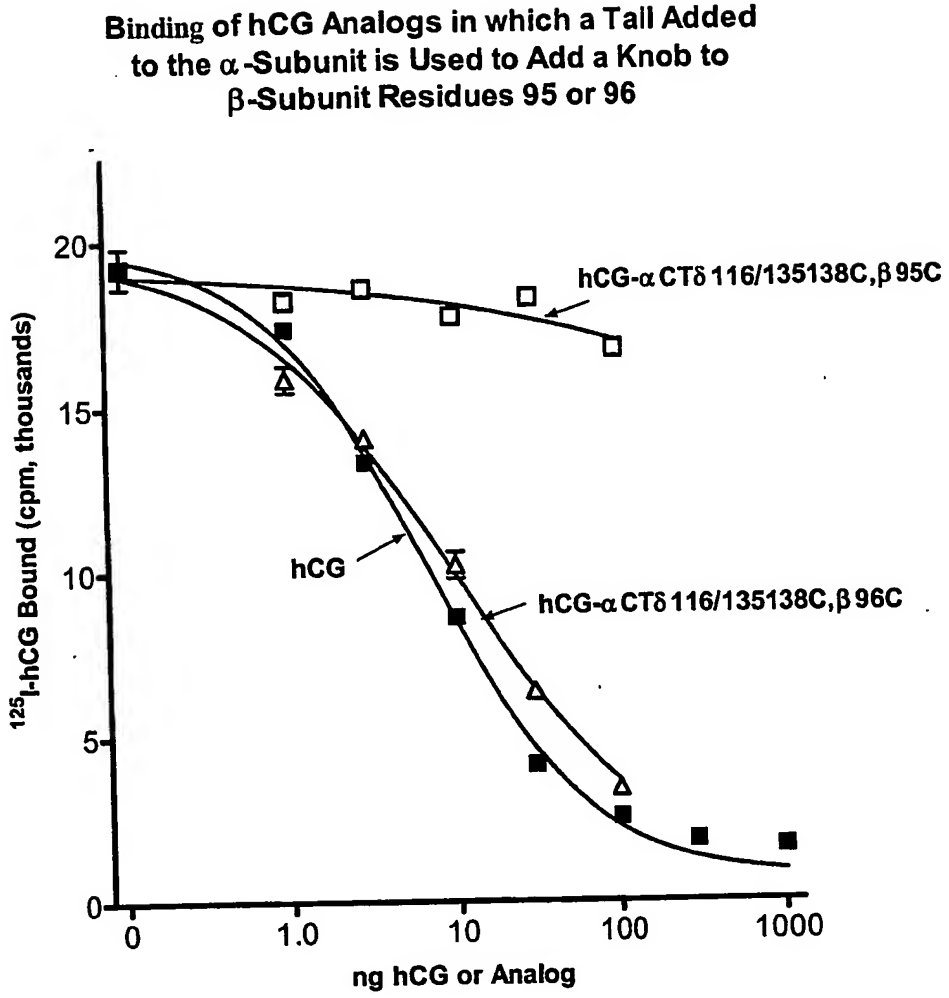

Binding of hCG Analogs in which a Tail Added to the α-Subunit is Used to Add a Knob to β-Subunit Residues 95 or 96
^{125}I-hCG Bound (cpm, thousands)
20
15
10
5
0
hCG-αCTδ116/135138C,β95C
hCG
hCG-αCTδ116/135138C,β96C
0
1.0
10
100
1000
ng hCG or Analog

Figure 28

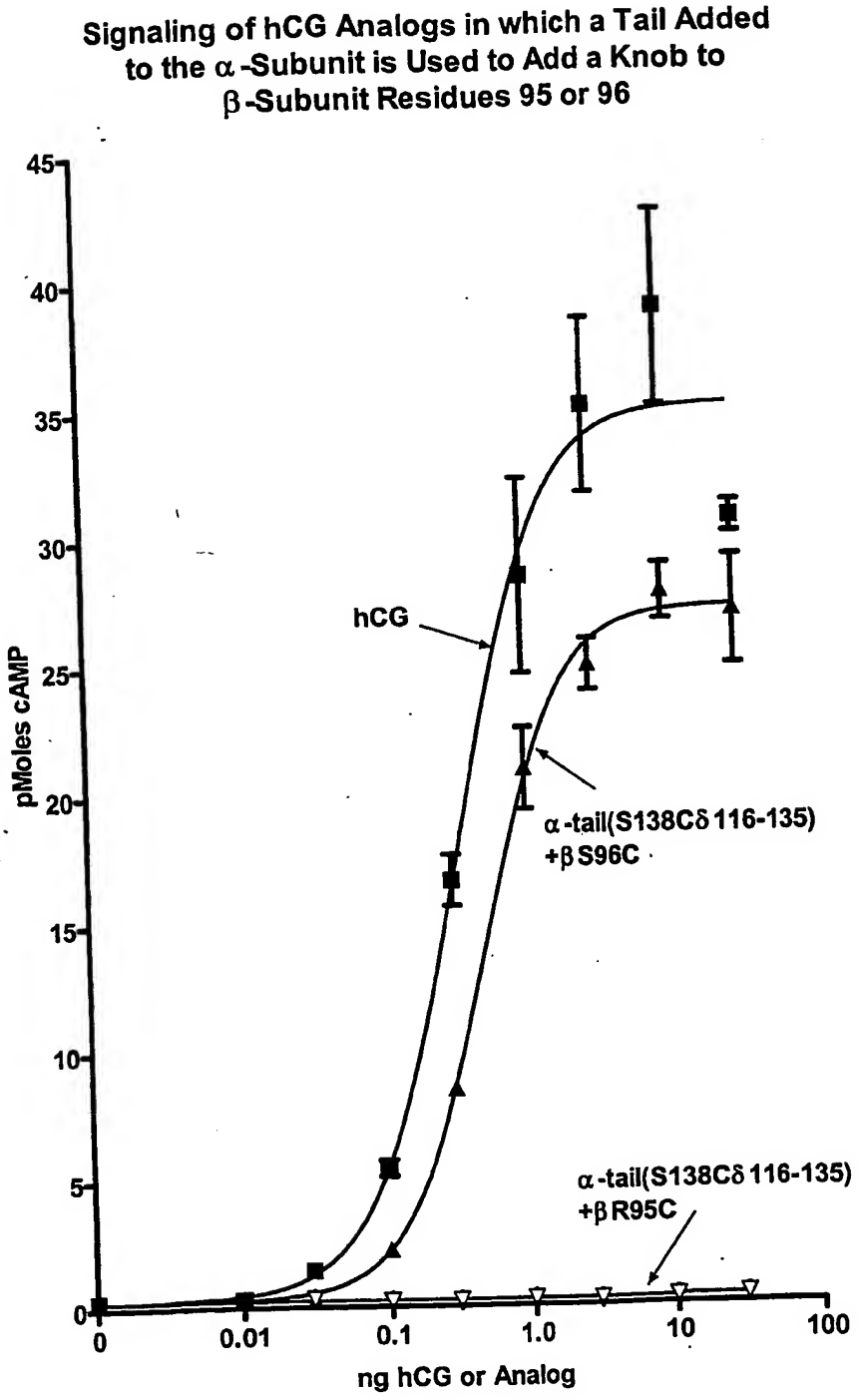

Signaling of hCG Analogs in which a Tail Added to the α-Subunit is Used to Add a Knob to β-Subunit Residues 95 or 96
pMoles cAMP
45
40
35
30
25
20
15
10
5
0
hCG
α-tail(S138Cδ 116-135) +β S96C
α-tail(S138Cδ 116-135) +β R95C
0
0.01
0.1
1.0
10
100
ng hCG or Analog

Figure 29

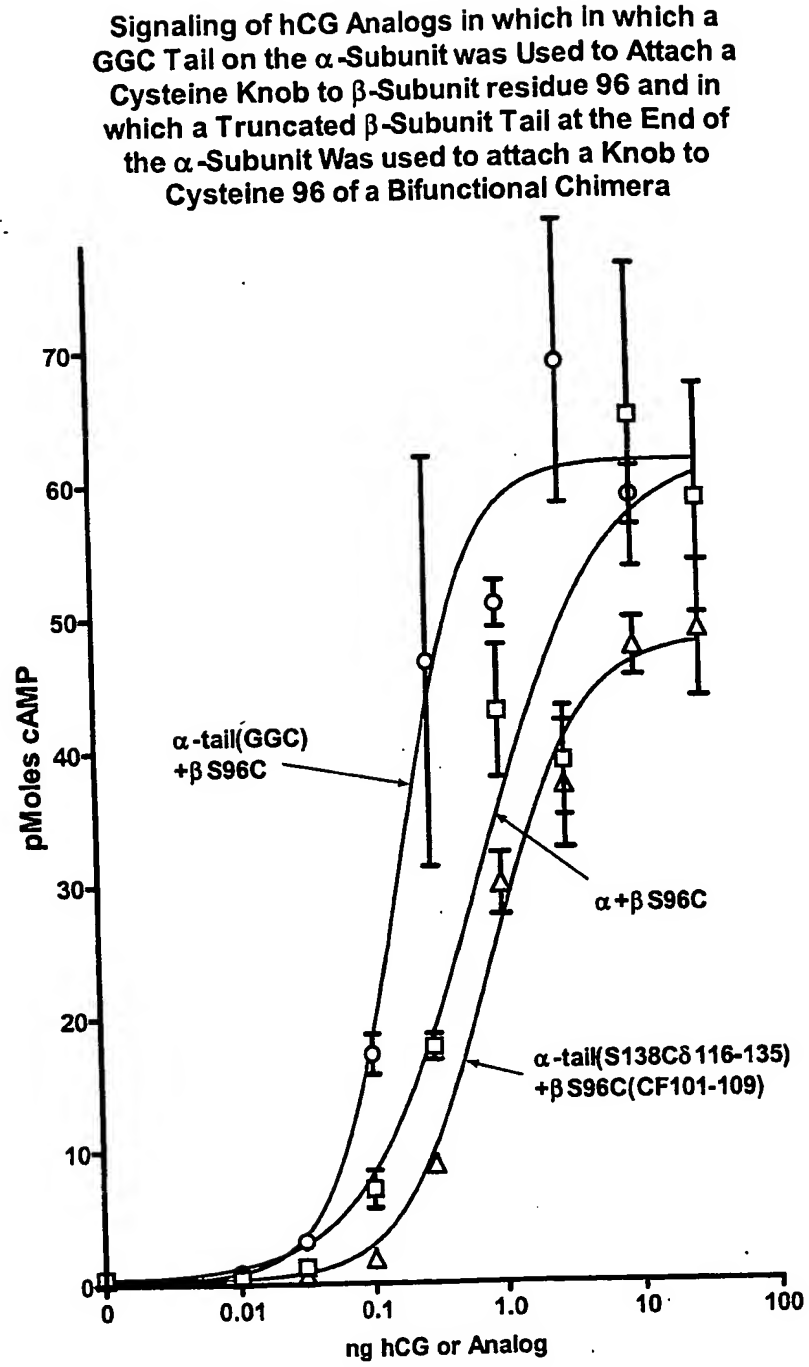

Signaling of hCG Analogs in which In which a GGC Tail on the α-Subunit was Used to Attach a Cysteine Knob to β-Subunit residue 96 and in which a Truncated β-Subunit Tail at the End of the α-Subunit Was used to attach a Knob to Cysteine 96 of a Bifunctional Chimera
pMoles cAMP
70
60
50
40
30
20
10
0
α-tail(GGC) +β S96C
α+β S96C
α-tail(S138Cδ116-135) +β S96C(CF101-109)
0
0.01
0.1
1.0
10
100
ng hCG or Analog

Figure 30

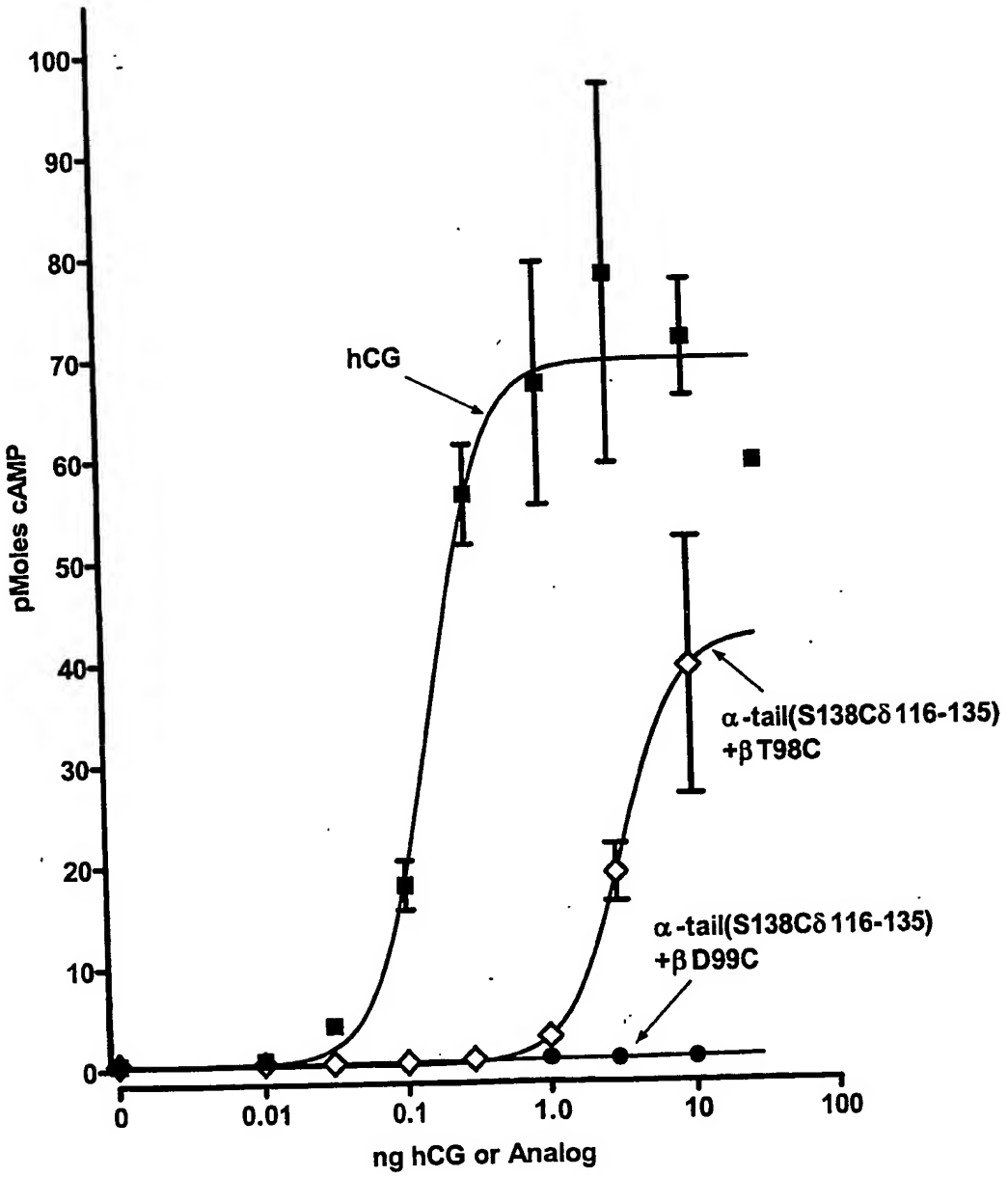

Signaling of hCG Analogs in which a Truncated Tail Added to the α-Subunit is Used to Add a Knob to β-Subunit Residues 98 or 99
pMoles cAMP
100
90
80
70
60
50
40
30
20
10
0
hCG
α-tail(S138Cδ116-135) +β T98C
α-tail(S138Cδ116-135) +β D99C
0
0.01
0.1
1.0
10
100
ng hCG or Analog

Figure 31

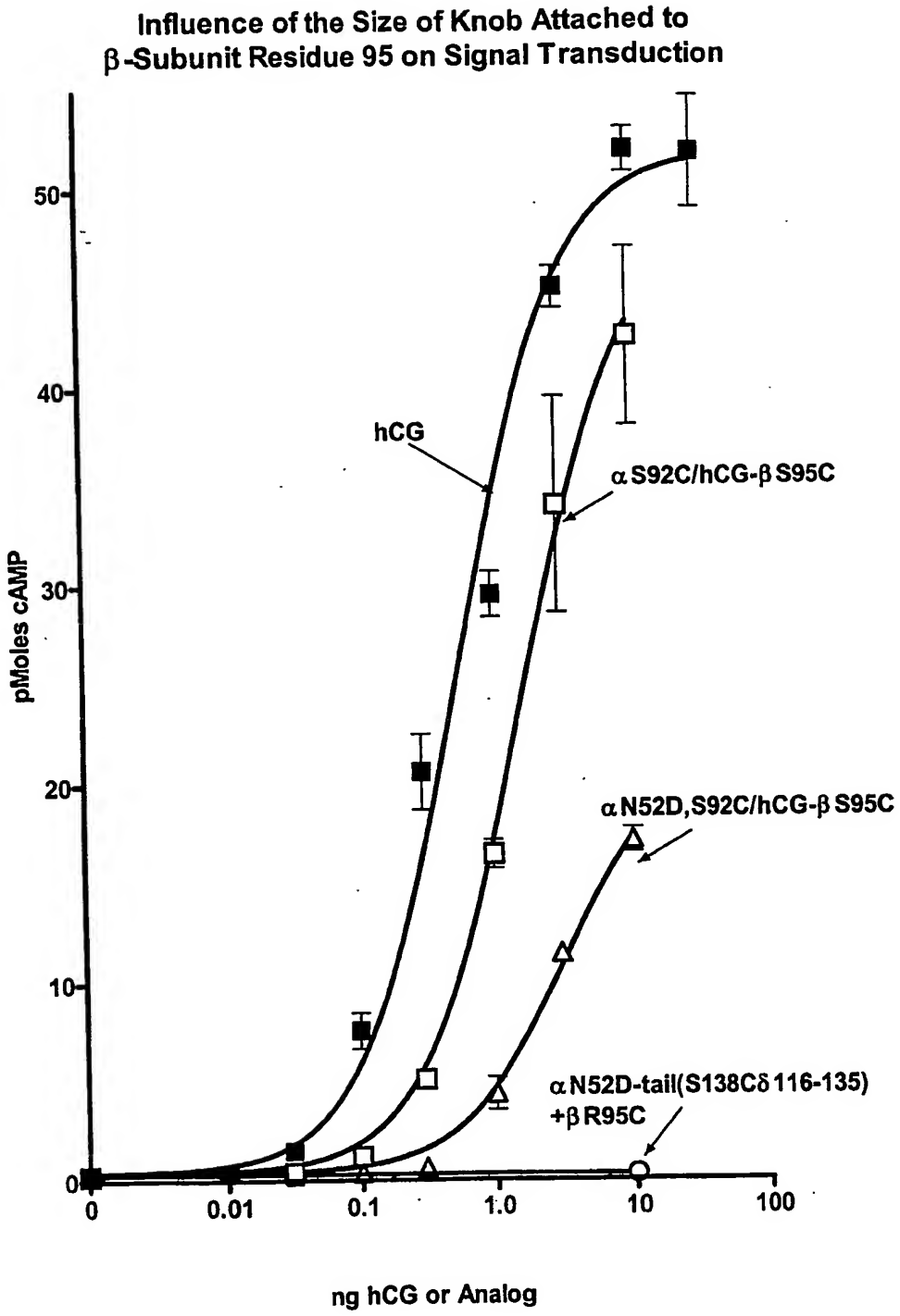

Influence of the Size of Knob Attached to
β-Subunit Residue 95 on Signal Transduction
pMoles cAMP
50
40
30
20
10
0
hCG
αS92C/hCG-βS95C
αN52D,S92C/hCG-βS95C
αN52D-tail(S138Cδ116-135)
+βR95C
0
0.01
0.1
1.0
10
100
ng hCG or Analog

Figure 32

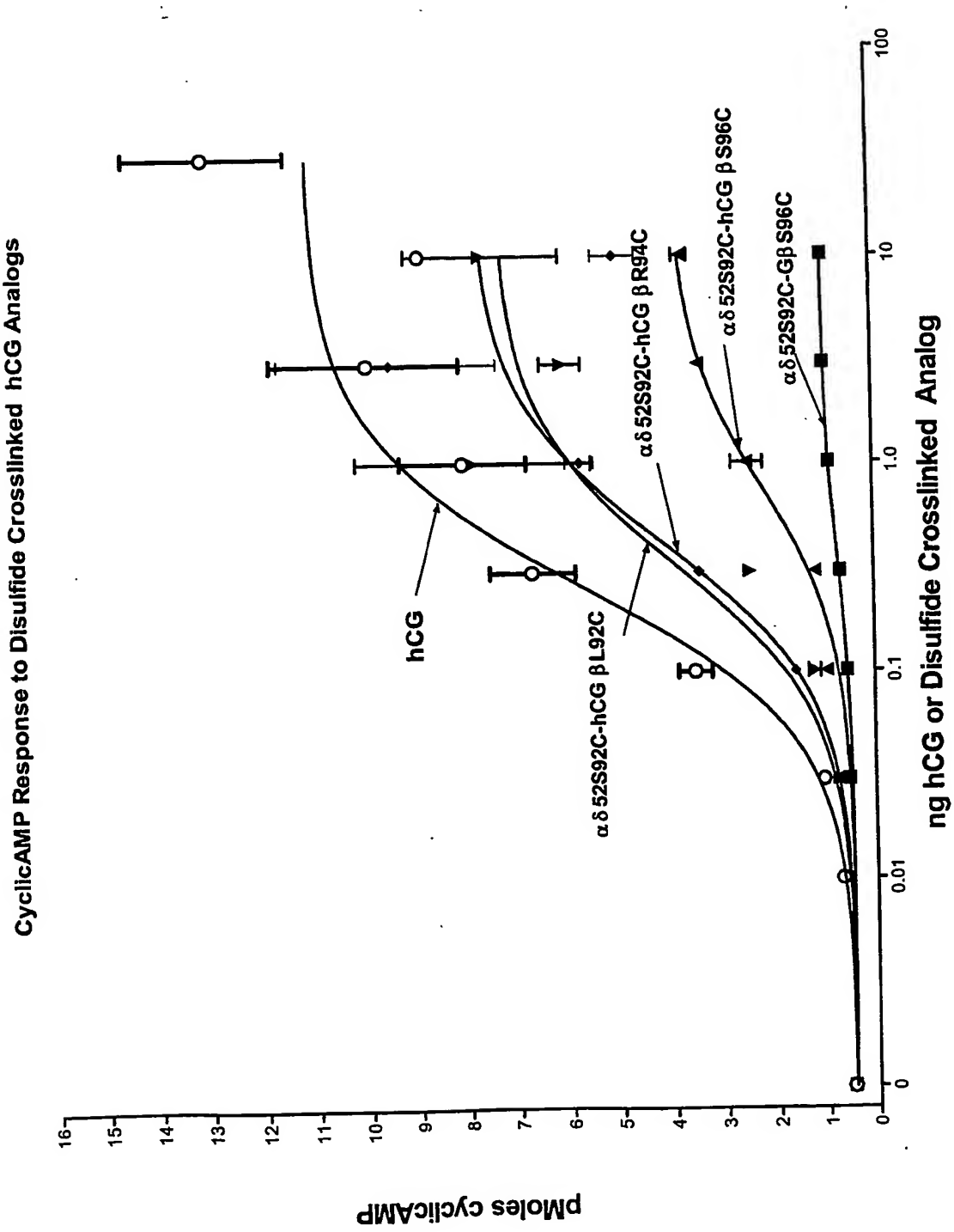

CyclicAMP Response to Disulfide Crosslinked hCG Analogs
pMoles cyclicAMP
ng hCG or Disulfide Crosslinked Analog
hCG
αδ52S92C-hCG βL92C
αδ52S92C-hCG βR94C
αδ52S92C-hCG βS96C
αδ52S92C-GβS96C
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
0
0.01
0.1
1.0
10
100

Figure 33